DOCUMENT RESUME

ED 400 691 FL 024 168

AUTHOR Dickerson, Wayne B., Ed.; Kachru, Yamuna, Ed.
TITLE Issues and Developments in English and Applied Linguistics (IDEAL), 1994.
INSTITUTION Illinois Univ., Urbana. Div. of English as an International Language.
REPORT NO ISSN-1047-9767
PUB DATE 94
NOTE 115p.; Published annually. Indexed on an article-by-article basis in CIJE.
PUB TYPE Collected Works - General (020) -- Collected Works - Serials (022)
JOURNAL CIT Issues and Developments in English and Applied Linguistics; v7 1994

EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS Applied Linguistics; Discourse Analysis; *English (Second Language); Interpersonal Communication; Japanese; *Language Patterns; Language Research; Language Usage; Linguistic Theory; Nouns; *Phoneme Grapheme Correspondence; Second Language Instruction; Second Language Learning; Speech Skills; Spelling; *Stress (Phonology); Verbs
IDENTIFIERS Japanese People

ABSTRACT

Seven papers on topics of English-as-a-Second-Language (ESL) instruction, language research, and applied linguistics are presented: "ESL Students and Common L2 Conversation-Making Expressions" (Eli Hinkel); "Thematic Options in Reporting Previous Research" (Sarah Thomas, Thomas Hawes); "Connected Speech Modifications in the English of Japanese ESL Learners" (Janet Anderson-Hsieh, Timothy Riney, Kenneth Koehler); "Discourse Stress and Phrasal Verbs" (Wayne B. Dickerson); "The Stress of Compound Nouns: Linguistic Considerations and Pedagogical Considerations" (Laura D. Hahn); "Where Phonology Meets Orthography" (Thomas R. Hofmann); and "Attitude as a Description of Intonational Meaning" (John M. Levis). (MSE)

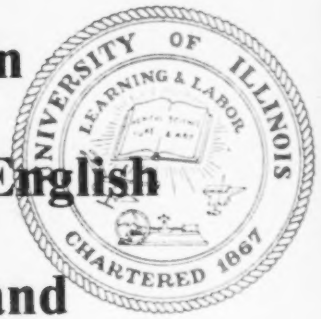
****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 400 691

IDEAL

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☐ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Issues and Developments in English and Applied Linguistics



Volume 7
1994

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
Wayne B Dickerson
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

FL024168

BEST COPY AVAILABLE

Issues and Developments in English and Applied Linguistics (IDEAL)

PURPOSE AND SCOPE

IDEAL is intended as a forum for research into the acquisition and teaching of English as a second language. Articles, review articles and reviews in any of the following areas are welcome: Teaching English as a second language, second language acquisition, varieties of English, neurolinguistics, sociolinguistics, psycholinguistics, pragmatics, discourse analysis, applications of computer technology to second language teaching and research. It is especially important that contributions of a theoretical nature make explicit the practical implications of the research they report.

SUBSCRIPTION INFORMATION

IDEAL is published once each year in the spring. The subscription rate is $8.00 per year. Subscription and business correspondence should be addressed to:

IDEAL Subscriptions
Division of English as an International Language
3070 Foreign Languages Building
707 South Mathews Avenue
Urbana, Illinois 61801
U.S.A.

INFORMATION FOR CONTRIBUTORS

IDEAL invites authors to submit for consideration articles, review articles, and reviews that fall within the purview of the journal. Manuscripts submitted should conform to the general style sheet given on the inside of the back cover. For more information about the range of topics of interest to *IDEAL* and the editorial practices followed by *IDEAL*, please refer to the Editorial, Volume 1, 1986.

Issues and Developments in English and Applied Linguistics (IDEAL)

Editors

Wayne B. Dickerson (Chair), Yamuna Kachru

International Editorial Advisory Board

Ayọ Bamgboşe
Gillian Brown
Robert Kaplan
Anne Pakir
Bernard Spolsky
Henning Wode

Editorial Assistant

Marguerite S. Courtright

Additional Readers: Lawrence Bouton, Lonna Dickerson

Published by

Division of English as an International Langauge
Intensive English Institute
University of Illinois at Urbana-Champaign

Copyright © 1994

ISSN 1047-9767

IDEAL

Volume 7
1994

Contents

ESL Students and Common L2 Conversation-Making Expressions 1
Eli Hinkel

Thematic Options in Reporting Previous Research 13
Sarah Thomas and Thomas Hawes

Symposium on Phonology and Pronunciation

Connected Speech Modifications in the English of Japanese ESL Learners 31
Janet Anderson-Hsieh, Timothy Riney, and Kenneth Koehler

Discourse Stress and Phrasal Verbs 53
Wayne B. Dickerson

The Stress of Compound Nouns: Linguistic Considerations and Pedagogical Considerations 67
Laura D. Hahn

Where Phonology Meets Orthography 79
Thomas R. Hofmann

Attitude as a Description of Intonational Meaning 91
John M. Levis

IDEAL 7, 1994

ESL STUDENTS AND COMMON L2 CONVERSATION-MAKING EXPRESSIONS[1]

Eli Hinkel

Ritualized American conversation-making expressions have the purpose of facilitating social interactions. However, pragmatic failure can occur if NNSs (non-native speakers) misinterpret the pragmatic force of these conversational expressions. This study focuses on the differences in NS (native speaker) and NNS interpretations of the pragmatic force in twenty common conversation-making expressions (Coulmas, 1979), such as *It's really cold today* and *How long have you been in the U.S.?* In a survey based on rankings of multiple-choice selections, recognition of the pragmatic force in ritualized expressions by highly-trained NNSs was unsystematic compared to that by NSs. The NSs' and NNSs' responses did not exhibit strong correlation for any of the given conversational expressions. Moreover, a proportion of NNSs interpreted the pragmatic force of some of these expressions as that of a face-threatening act. These findings imply that NNSs need to be taught conversation-making expressions and the forms hat interactional exchanges can take.

INTRODUCTION

ESL teachers and American students frequently note that international students often remain outside observers and do not take an active part in L2 peer-group social interactions. NNSs may not participate in conversational exchanges for a variety of reasons, but one contributing factor could be that NNSs do not always understand the pragmatic force in common and ritualized American conversation-making expressions.

Conversation-making expressions, such as *What's up?, How are you doing?,* and *It's really cold/hot today,* are a frequently used in casual social interactions that take place daily in offices, college classes, and campus lounges and restaurants, i.e. the locales where students interact with one another. Such expressions, routinely used in brief social encounters, are conversational moves (statements or questions) that serve means of initiating and maintaining conversations. They represent "a mark of friendship or interest" or "rapport-inspiring activity" (Brown & Levinson, 1987, p. 117) and have the purpose of facilitating social interactions (Bach & Harnish, 1979, p. 62). Conversation-making expressions are rarely expected to be profound and usually involve weather, an object or person in the immediate environment, or something that the speaker believes he or she has in common with the hearer that can help promote "conversational cooperativeness" and "get a conversation going" (Wardhaugh, 1985, p. 22). A typical exchange can run along the lines of:

(1) A: How are you this morning?
B: Fine. And you?
A: Fine. Did you hear they predicted snow for this afternoon?

However, the use of ritualized conversational expressions necessitates the participants' ability to assign them a pragmatic force and recognize their communicative purpose (Leech, 1983). For example, *What did you do over the weekend?* is probably an attempt at conversation-making and may require a reasonably detailed response; on the other hand, the question *How was your weekend?* could be used as a greeting, depending on context, and may not be intended to elicit a lengthy response. To complicate matters, Leech (1977) and Brown & Levinson (1987) have established that pragmatic force is frequently ambivalent, and context does not always remove the ambiguity.

Although a great deal of research has focused on various forms of the L2 speech act, relatively little has addressed learner interpretations of conversational discourse. Among the few, Devine (1982) and Bouton (1989) have investigated how NSs and NNSs interpreted conversational implicature. They found that NNSs frequently misunderstood the speaker's communicative purpose. Similarly, Bouton (1990) concluded that even NNSs with a relatively high proficiency have difficulty interpreting implications in conversations and hence should be taught the appropriate skills.

A misinterpretation of the speaker's purpose can be particularly damaging and can result in pragmatic failure (Thomas, 1983) if the hearer interprets it as a threat to his or her face, i.e "an expression of disapproval, criticism, contempt, or ridicule, ... [and] insult" when the hearer perceives that the speaker does not like "one or more [of the hearer's] acts, personal characteristics, ... beliefs or values" (Brown & Levinson, 1987, p. 66). For example, an advanced Chinese student responded *"Why do you ask me? Did I do something wrong?"* to the conversational expression *"How is everything going?"* and had to be reassured that the expression had no other goal than to show friendly interest.

The purpose of this study is to investigate whether advanced and highly-trained NNSs recognize the pragmatic force of common English conversation-making expressions and understand them in ways NSs do. Specifically, the investigation focused on two issues:

(1) whether the pragmatic force of common and ritualized conversation-making expressions as a means for initiating and/or maintaining conversations is consistently and similarly recognized by NSs and NNSs, and

(2) if NSs or NNSs don't interpret the pragmatic force intended in such expressions as primarily that of initiating and/or maintaining conversations, how might they interpret the pragmatic force of such expressions. The second part of this study investigated the possibility that NNSs may perceive a threat to their face from the conversation-making expressions.

METHOD

Research in L2 learner perceptions of the appropriateness and purpose of communicative routines is limited to observing conversations (Wolfson, 1986; Takahashi & Beebe, 1987) or obtaining data through various questionnaire formats. While open-ended instruments and "naturalistic" approaches to data gathering, such as audio- and video-taping are frequently prone to problems associated with interpreting subjects' responses and controlling for extralinguistic variables, multiple-choice questionnaires, within limitations, have been proven to be a more

effective measure of subjects' ability to interpret a speaker's conversational implicature (Bouton, 1989). Since the pragmatic force of an utterance is one form of conversational implicature (Thomas, 1983), the multiple-choice format was chosen as an appropriate instrument for identifying hearer perceptions of the pragmatic force in conversation-making expressions.

Subjects

All participants in the study were enrolled in the Ohio State University. Of the 99 ESL students, 48 were speakers of Chinese (CH), 20 each of Indonesian (IN) and Korean (KR), 6 Arabic (AR), and 5 Spanish (SP). The NNSs represented a highly advanced group of language learners with a mean TOEFL score of 587. Their residence in the U.S. typically fell within the range of 1 to 4 years, with a mean of 1.7. It follows that all NNSs had had some exposure to their host culture and L2 conversational routines.

In addition to the NNSs, a group of 24 NS undergraduate students, raised in Ohio, Indiana, and Kentucky, participated in the study. All NSs were taking a required composition course and were enrolled in various departments in the University. This study compares the pragmatic force that the NNS and NS students assigned to the questionnaire expressions.

The Questionnaire

To delineate the social distance in questionnaire situations, a peer acquaintance was briefly outlined:

When you are responding to the questions, please keep in mind the following imaginary student: N.H. is a student in your department. You have similar interests in your majors. You have talked to N.H. several times in the department lounge.

Following this description, 24 interactional situations were presented, in which the speaker used ritualized conversation-making expressions routinely heard in everyday exchanges, such as *How long have you been in the U.S.?* and *I haven't seen you in a while* (see Table 1 for a complete list). The situations and the conversational expressions came from four ESL speaking-skills texts (Sharpe, 1984; Tillitt & Bruder, 1985; Helgesen, Mandeville & Jordan, 1986; Tansey & Blatchford, 1987) which work with conversation-making rituals frequently used in American English (see Table 1). Each item in the questionnaire adhered to the same format: a situation was briefly described, following the situation, three multiple-choice selections were presented. For example:

(2) [19] N.H. says to you: "Where do you live in Columbus?" By saying this, N.H.
(A) ind icates that N.H. wants to visit you
(B) wants to compare apartments with you
(C) tries to make conversation

(3) [6] You are talking to N.H. in the library. N.H. says to you: "It's really cold today." By saying this, N.H.
(A) shows that N.H. does not want to study
(B) indicates N.H. the library is too far from the main campus
(C) tries to make conversation

One of the choices remained constant for all items and identified the statement or the question presented in the situation as a conversation-making expression (*tries to make conversation*)[2] (see Appendix for the text of the questionnaire). According to the questionnaire instructions, the subjects were to rank the multiple choice item that best described the speaker's communicative purpose as 1; the second best selection was ranked 2, and the least applicable 3. The first four situations were used as a "warm-up" and were omitted from the data analysis.

Table 1
Conversational Expressions in the Questionnaire

Not used in data analysis:

1. I have always wanted to travel abroad.
2. How have you been lately?
3. Is that a new coat?
4. Where are you from?

Used in Data Analysis:

5. What are you taking this quarter?
6. It's really cold today. [conversation in the library]
7. Are you going home for the break?
8. There are many foreign students on campus.
9. You should go to New York. New York is a lot of fun.
10. It's really cold today. [conversation in the street]
11. How long have you been in the U.S.?
12. How do you like Columbus?
13. Do you like it in America?
14. Did you visit your family during the vacation?
15. Two years ago, my friend had a roommate who was a foreign student.
16. Have you been to California?
17. Do you plan to go back to your country after you graduate?
18. Do you like American food?
19. Where do you live in Columbus?
20. It is probably difficult to study in a foreign country.
21. Do you have American friends?
22. OSU is a very large university.
23. I haven't seen you in a while.
24. In my economics class, we have a student from your country.

In situations #5-24, 10 included neutral or positive statements without a threat to the hearer's face (Brown & Levinson, 1987), as in (2-3). The other 10 contained one neutral or positive statement and one statement which presented a threat to the hearer's face, as in (4c) and (5c).

(4) [8] N.H. says to you: "There are many foreign students on campus." By saying this, N.H.
- (A) indicates that OSU is an internationally famous university
- (B) tries to make conversation
- (C) indicates that there are too many foreign students on campus

(5) [24] N.H. says to you: "In my economics class, we have a student from your country." By saying this, N.H.
(A) tries to make conversation
(B) indicates that N.H. likes foreign students
(C) indicates that N.H. dislikes foreign students

In the situations and the accompanying multiple-choice selections, all references to gender, age, nationality, and native language were avoided; no pronouns, except the first person singular and second person singular were used. Passive voice and modal verbs, except for should, were excluded; the vocabulary utilized in the questionnaire was limited so as not to impede the task.

RESULTS AND ANALYSIS

The participants' responses were analyzed for each situation, 5 through 24. The rankings (1 – 'best describes the speaker's purpose' through 3 – 'least applicable') given by the various participants to the choice 'tries to make conversation', were summed and averaged. For example, the average rankings given to this selection in situation #5, *What are you taking this quarter?*, were 1.04 by NS, 1.33 by Indonesians, 1.65 by Chinese, 1.85 by Spanish-speakers, 2.20 by Koreans, and 2.79 by Arabic-speakers. The fact that the NS value is slightly greater than 1.00 indicates that not all NSs considered the primary pragmatic force of the question, *What are you taking this quarter?* as conversation-making.

Kendall's Coefficient of Concordance (*W*) was computed for average rankings given by all groups of participants across the conversational expressions #5-24 (Table 2). A *W* value of 1.00 indicates perfect concordance (or consistency) between the rankings; the closer this value is to 0, the more randomly the rankings are assigned.

Table 2
Kendall's Coefficient of Concordance (*W*)
Rank Orderings of Conversational Expressions by NSs and NNSs

#	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
NS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CH	4	3	6	4	4	3	4	2	3	3	4	4	3	2	2	6	3	3	2	3
IN	5	2	3	5	6	4	5	6	4	4	6	5	4	4	4	5	5	2	3	5
KR	3	5	4	3	5	2	2	5	5	5	3	3	5	3	5	2	2	4	4	2
AR	6	6	5	6	2	5	6	4	6	2	5	6	2	6	3	3	6	5	5	6
SP	2	4	2	2	3	6	3	3	2	6	2	2	6	5	6	4	4	6	6	4

By NSs and NNS combined: $W = .50$ ($p < .01$)
By NNSs only: $W = .12$ ($p = .05$)
By NSs only: $W = .998$ ($p < .0001$)

The value $W = .50$ ($p < .01$) indicates a marginal degree of concordance in the subjects' rankings; the value $W = .12$ ($p = .05$) computed for the five NNS groups shows only weak concordance and approaches random state. Another Coefficient of Concordance

computed for rankings given by NSs approximated 1.00 ($p < .001$). The disparity between *W* for exclusively NSs ($W = .998$) and all groups of NNSs (.12) suggests that the rankings given by NNSs to the pragmatic force of expressions #5-24 were markedly different from those given by Nss.

To determine whether the rankings exhibited substantial correlations between groups, a Spearman's Rank Correlation Coefficient matrix was computed (Table 3) using the previously discussed average rankings by groups. Excluding the cell entries along the diagonal, the values in only 4 cells equaled or exceeded the critical test value of .45 ($p = .05$) and exhibited significant, albeit marginal correlations between the rankings of NSs and Indonesians (.53), NSs and Koreans (.47), NSs and Arabs (.45), and the Chinese and Indonesians (.52). The other 11 cells in the matrix show low positive or negative correlations that are not significant.

Table 3
Spearman's Rank Correlation Coefficient Matrix

	NS	CH	IN	KR	AR	SP
NS	1.00					
CH	0.36*	1.00*				
IN	0.53*	0.52	1.00			
KR	0.47*	0.22	0.14	1.00		
AR	0.45	0.42	0.30	-0.16	1.00	
SP	0.40	0.19	0.37	0.26	-0.02	1.00

* significant at (p = .05 2-tailed test)

The data in Tables 2 and 3 indicate that overall, NNSs did not interpret the pragmatic force of common conversation-making expressions the way that NS did.

The second part of the study is concerned with how NNS do perceive some of these conversational devices. As has been mentioned, 10 items in the questionnaire contained a multiple-choice selection with an explicit threat to the hearer's face, as in (6a):

(6) [23] N.H. says to you: "I haven't seen you in a while." By saying this, N.H.
(A) indicates that N.H. thinks you are not a good friend
(B) shows that N.H. wants to be your friend
(C) wants to greet you and tries to make conversation

In situations with threat to face, only one of the NSs (4%) in only one of the situations (see (17) in Table 4) ranked such a selection as best describing the pragmatic force of the conversation-making expressions #5-24 (Table 4). Almost all NSs ranked such items as the least likely interpretations of the pragmatic force of the speaker's statements or questions. However, a proportion of the NNSs ranked them as best describing the pragmatic force in the situations (see Table 4). These rankings indicate that NNSs often interpreted some of the conversation-making expressions listed in #5-24 as disparagement.

Table 4
Perceiving Threat to Hearer's Face in Conversational Expressions

N=123 #	NSs (n=24) %	Chinese (n=48) %	Indonesian (n=20) %	Korean (n=20) %	Arabic (n=6) %	Spanish (n=5) %
8. There are many foreign students on campus.	0	19	20	5	50	20
9. You should go to New York. New York is a lot of fun.	0	15	20	25	0	0
11. How long have been been in the U.S.?	0	19	0	15	0	0
13. Do you like it in America?	0	27	10	25	0	0
15. Two years ago, my friend had a roommate who was a foreign student.	0	10	10	0	0	0
17. Do you plan to go back to your country after you graduate?	4	29	15	25	67	20
20. It is probably difficult to study in a foreign country.	0	13	20	15	50	20
21. Do you have American friends?	0	13	10	15	0	0
23. I haven't seen you in a while.	0	15	15	0	0	0
24. In my economics class, we have a student from your country.	0	8	0	15	0	0

CONCLUSIONS

The results of this study demonstrate that the NNS interpretations of the pragmatic force in common and ritualized conversation-making expressions were almost random, while NS interpretations were highly consistent. It seems clear that NNSs frequently misunderstand the pragmatic force of common American conversation-making expressions. The most disconcerting finding of this study is that NNSs occasionally interpreted the primary communicative purpose behind some conversation-making expressions as disapproval or disregard. While further investigation of NNSs' understanding of conversation-making expressions is undoubtedly necessary, it seems evident that NNS may need to be explicitly taught conversational skills and the usage of social conversation-making expressions.

THE AUTHOR

Eli Hinkel received her Ph.D. in linguistics from The University of Michigan in 1984 and has taught in intensive and ITA-training programs for the past 14 years. Her research interests include concept-based transfer and L2 teaching methodologies. She directs the ESL Program at Xavier University.

NOTES

[1]A draft of this paper was presented at the Sixth Annual Conference on Pragmatics and Language Learning at the University of Illinois at Urbana-Champaign.

[2]The multiple-choice options for all 24 questions (except tries to make conversation) were suggested by 25 NNSs during the pilot stages of the study. Of the 25 NNS, 14 were speakers of Chinese, 5 Korean, 2 each Indonesian, Arabic, and Spanish.

REFERENCES

Bach, Kent & Harnish, Robert. (1979). *Linguistic communication and speech acts.* Cambridge, MA: The MIT Press.

Bouton, Lawrence. (1989). So they got the message, but how did they get it? *IDEAL*, 4, 119-148.

Bouton, Lawrence. (1990). The effective use of implicature in English: Why and how it should be taught in the ESL classroom. In L. Bouton & Y. Kachru (Eds.), *Pragmatics and Language Learning*, 1, 43-52. Brown, Penelope, & Levinson, Stephen. (1987). Politeness. Reprinted. Cambridge: Cambridge University Press.

Coulmas, Florian. (1979). Routine formulae. *Journal of Pragmatics*, 3, 219-38.

Devine, Joanne. (1982). A question of universality: Conversational principles and implication. In M.A. Clarke & J. Handscombe (Eds.), *On TESOL '82*, 191-206. Washington, D.C.: TESOL.

Helgesen, Marc, Mandeville, Thomas & Jordan, Robin. (986). *English firsthand.* San Francisco, CA: Lateral Communications.

Leech, Geoffrey. (1977). *LAUT Series*, 46. University of Trier.

Leech, Geoffrey. (1983). *Principles of Pragmatics.* London: Longman.

Sharpe, Pamela. (1984). *Talking with Americans.* Boston: Little and Brown.

Takahashi, Tomoko, & Leslie Beebe. (1987). The development of pragmatic competence by Japanese learners of English. *JALT Journal*, 8, 131-55.

Tansey, Catherine, & Blatchford, Charles. (1987). *Understanding conversations.* Belmont, CA: Wadsworth.

Thomas, Jenny. (1983). Cross-cultural pragmatic failure. *Applied Linguistics*

Tillitt, Bruce, & Bruder, Mary. (1985). *Speaking naturally.* Cambridge: Cambridge University Press.

Wardhaugh, Ronald. (1985). *How conversation works.* Oxford: Basil Blackwell.

Wolfson, Nessa. (1986). Research methodology and the question of validity. *TESOL Quarterly*, 20, 689-99.

APPENDIX
The Questionnaire

1. N.H. says to you: "I have always wanted to travel abroad." By saying this, N.H.
   (A) indicates that N.H. is jealous of you because you are in a foreign country
   (B) indicates that N.H. likes you because you are from a foreign country
   (C) tries to make conversation

2. You see N.H. by the vending machines in the hallway. N.H. says to you: "How have you been lately?" By saying this, N.H.
   (A) indicates that N.H. is concerned about you
   (B) wants to find out how you like the teachers in your classes
   (C) wants to greet you and tries to make conversation

3. N.H. says to you: "Is that a new coat?" By saying this, N.H.
   (A) shows that N.H. wants to try on your new coat
   (B) tries to make conversation
   (C) N.H. thinks you have a lot of money to buy a new coat

4. N.H. says to you: "Where are you from?" By saying this, N.H.
   (A) shows that N.H. does not like foreign students
   (B) shows interest in your country
   (C) tries to make conversation

5. N.H. says to you: "What are you taking this quarter?" By saying this, N.H.
   (A) wants to find out what grades you have been getting
   (B) tries to make conversation
   (C) shows that N.H. wants your help with a homework assignment

7. N.H. says to you: "Are you going home for the break?" By saying this, N.H.
   (A) indicates that all students should go home for the break
   (B) indicates that you should invite N.H. to visit you
   (C) tries to make conversation

9. N.H. says to you: "You should go to New York. New York is a lot of fun." By saying this, N.H.
   (A) indicates that N.H. thinks that New York is the most important city in the country
   (B) tries to make conversation
   (C) indicates that you have not travelled enough

10. You are talking to N.H. in the street. N.H. says to you: "It's really cold today." By saying this, N.H.
   (A) indicates that N.H.'s clothing is not appropriate for the weather
   (B) indicates that students from warmer climates are probably uncomfortable in Ohio
   (C) tries to make conversation

11. N.H. says to you: "How long have been been in the U.S.?" By saying this, N.H.
    (A) tries to make conversation
    (B) shows that N.H. thinks your English is good
    (C) shows that N.H. thinks your English is not good

12. N.H. says to you: "How do you like Columbus?" By saying this, N.H.
    (A) wants to know whether you miss your family
    (B) tries to make conversation
    (C) shows that N.H. likes Columbus

13. N.H. says to you: "Do you like it in America?" By saying this, N.H.
    (A) indicates that if you are in America, you probably like it better here than in your country
    (B) indicates that you should tell N.H. about your country
    (C) tries to make conversation

14. N.H. says to you: "Did you visit your family during the vacation?" By saying this, N.H.
    (A) indicates that you have been away from your family for a long time
    (B) tries to make conversation
    (C) indicates that if you feel lonely, you should visit N.H.

15. N.H. says to you: "Two years ago, my friend had a roommate who was a foreign student." By saying this, N.H.
    (A) tries to make conversation
    (B) indicates that N.H. likes foreign students
    (C) indicates that N.H. dislikes foreign students

16. N.H. says to you: "Have you been to California?" By saying this, N.H.
    (A) indicates that N.H. thinks that California is the best state in the country
    (B) tries to make conversation
    (C) indicates that N.H. dislikes California

18. N.H. says to you: "Do you like American food?" By saying this, N.H.
    (A) shows pride in American restaurants
    (B) indicates that N.H. likes American food
    (C) tries to make conversation

20. N.H. says to you: "It is probably difficult to study in a foreign country." By saying this, N.H.
    (A) indicates that N.H. thinks you have a heavy accent
    (B) indicates that N.H. thinks your English is excellent
    (C) tries to make conversation

21. N.H. says to you: "Do you have American friends?" By saying this, N.H.
    (A) indicates that having foreign students as friends is probably exciting
    (B) indicates that foreign students should not try to make friends with Americans
    (C) tries to make conversation

22. N.H. says to you: "OSU is a very large university." By saying this, N.H.
(A) indicates that N.H. is a good student
(B) tries to make conversation
(C) indicates that N.H. is not a good student

IDEAL 7, 1994

THEMATIC OPTIONS IN REPORTING PREVIOUS RESEARCH

Sarah Thomas and Thomas Hawes

This paper discusses one identifying feature of journal articles–reports or references to previous research. The study focuses on an examination of the formal and syntactic choices available to writers for making reporting statements and the conditions governing such choices. One factor contributing to the variety of reporting devices available in academic articles seems to be the writer's choice of a particular element of the message as the theme of the reporting statement. The purpose of this article is to examine thematic options and their distribution to discover patterns of choice characteristic of reporting and of the research articles in which they occur.

We investigate the way in which the choice of theme affects the syntactic form of the reports and suggest that it is possible to draw up a typology of reports based on participant subject in the theme. Reports were categorized as having agent themes, text reference themes, or content term themes. With these three main choices for theme, writers create variations when textual, interpersonal, or ideational elements in the form of circumstantial adjuncts work in conjunction with the subject headword. The different syntactic forms of reports resulting from different thematic choices are hypothesized to be associated with the function of reports in their contexts.

INTRODUCTION

The academic research article is generally recognized as the prime means for the communication of the most current research findings and the presentation of knowledge claims. Swales (1990) describes it as a written text reporting on some investigation carried out by its authors, and which usually relates the findings within it to those of others. The phenomenal growth of the research article as a genre means that it can be identified on two levels: one, in broad terms by a recognizable communicative purpose and by the presence of characteristic features with standardized form, function, and layout/presentation which are regarded as part of its general conventions. Secondly, some characteristics of the features of research articles are specific to different fields or disciplines and enable the recognition of sub-genres, such as literary research articles or experimental research articles. A disproportionately large number of the linguistic descriptions resulting from genre analysis have focused on the academic research article. This concern of genre analysis with the research article has often been motivated by pedagogical purposes, namely, the need for teaching materials in ESP/EAP courses. Since ESP deals with texts and events directly related to learners' fields of study or occupation, the emphasis has been on examining the actual language of these situations. The particular disciplines students are in make demands on them to read and write in particular genres. The rational is that pedagogy which aims

at enabling learners to master these genres must be based on or at least informed by linguistic analyses characterizing these genres.

Genre descriptions of research articles vary in terms of their focus which may be on the whole article or on selected sections such as the introduction or the discussion sections. Another dimension of variation is the decision to select a particular feature for study, for example, tense or nominals, or, alternatively, to focus on the overall rhetorical structure of the article. One identifying feature of the academic articles which has been of interest to researchers is reporting or references to previous research.

Swales (1981, 1990) has investigated reporting and has identified it as the second of four structurally sequenced moves in the introduction sections of articles. Swales' original model for article introductions has now been modified as other investigators have pointed out the limitations to its generalizability. A number of researchers have found that Move 2, References to Previous Research, cannot always be identified as a single structural unit separate from Move 1 (Crookes, 1986; Bley-Vroman & Selinker, 1984), and that Move 2 may be entirely absent or found anywhere in the introduction (Jacoby, 1987). Dudley-Evans (1986), in his analysis and application of Swales' model to postgraduate dissertations, has identified References to Previous Research in discussion sections.

Another kind of study of reporting in research articles is citation analysis in which counts of references to other researchers or reporting statements have been employed as a way of assessing the contribution of researchers to the field. This is not of interest to those investigating the way the feature operates and its use in research articles. Other studies of citations have focused on the use of reporting verbs to communicate evaluation (Thompson and Ye, 1991), tense forms and sentence function (Oster, 1981; Lackstrom, Selinker & Trimble, 1972), and choice of voice and its relation to sentence function (Tarone et al., 1981).

This study is an attempt to add to currently available research findings on reports by investigating some of the factors which determine the varying syntactic forms of reporting statements.

THE STUDY AND ITS BACKGROUND

The present research stemmed from a need to investigate some of the characteristic features of academic articles which might serve as a point of departure for the development of teaching materials. A preliminary look at some representative articles indicated that reporting was a feature that recurred throughout the article and not just predominantly in the introduction sections.

Furthermore, reporting is a great deal more frequent and important than learners' EAP textbooks acknowledge. Teachers of EAP courses will testify to the observation that EAP learners commonly have serious difficulties with the range of choices involved in reporting, choices of syntactic form, tense, voice, reporting verbs, etc. Thus we consider reporting to be an important feature of journal articles that needs to be researched from all possible angles in order to provide input for pedagogic decisions.

FOCUS OF THE INVESTIGATION AND HYPOTHESIS

A previous study of reporting in academic articles that we carried out from the perspective of prediction (Tadros, 1985) suggested that some of the formal linguistic manifestations of the function of reporting in these texts had not been noted before. Thus, it seemed that a logical starting point for the study would be an examination of the formal and syntactic choices available to writers and the conditions governing such choices.

It was obvious, very early in the study, that there was a great deal of variation in the forms of the reports in academic articles. One factor responsible for the variation seemed to be the writer's choice of a particular element of the message as theme of the reporting statement. Our purpose in this research was to examine thematic options and their distribution to discover patterns of choice characteristic of reporting and of the research articles in which they occur.

The hypothesis that the choice of thematic element governs the syntactic forms of reports seemed plausible as a starting point. Furthermore, we wished to consider if there was any association between the different syntactic forms resulting from different thematic choices and the function of reports in their contexts, or the co-occurrence of these forms with certain discourse features.

The corpus for this study consists of 11 research articles on psychosomatic medicine taken from the British journal entitled *Journal of Psychosomatic Research*. They were selected at random, provided that they were not review articles, which we consider to have a somewhat different purpose. These articles provided the 129 reports for analysis as well as the contextual framework for the proposed investigation of form and function.

THEORETICAL BASIS FOR ANALYSIS OF THEME

The theoretical framework for this thematic analysis of reports draws on Halliday's notions and categories of theme. We have selected those which seemed most likely to prove revealing about the data and then proceeded to adapt or modify them as required.

Theme is a subsystem of the textual component, the third of the three major systems related to the ideational, interpersonal and textual functions in Halliday's theory of language (Halliday, 1985). Theme concerns the structural relations in the syntactic units of clause/sentence. Distinguishing theme from the notion of **given**, Halliday describes it as the point of departure of the message (ibid., p. 38), and identifies it with the initial position in the clause. The remainder of the clause is the rheme. A message, then, consists of the structure THEME + RHEME. Halliday's notion of a **multiple theme** also proved a useful analytic tool for study of the role of theme in reports. The theme of a clause can be a simple theme, functioning as the subject, complement, or adjunct. On the other hand, it can be a multiple theme with an internal structure made up of the three metafunctions of language–the ideational, the interpersonal, and the textual. The ideational element is obligatory in theme structure, while the textual and interpersonal elements are optional. The ideational contribution to theme structure is termed topical theme and is the element functioning as subject, complement, or circumstantial adjunct. The textual elements

contribute meaning by relating the message to the preceding/following text and the context. The interpersonal component of theme is generally made up of modal expressions which express the writer's judgment regarding the message.

For Halliday, theme ends after the first ideational element which may not necessarily be the grammatical subject of the sentence, but it includes any **preceding** textual or interpersonal elements. The example below from a text in Hoey (1986) illustrates this.

> *Now, after a ten-year programme, the Scottish plant breeding station thinks it has developed its own high enzyme barley....* [underlining added]

In this example, the theme (underlined) does not include the grammatical subject (*the Scottish breeding station*) since the first ideational element ends with *ten-year programme.*

BASIC ASSUMPTIONS

In what follows, we state our position on theme, since our interpretation of what is thematic in a sentence differs somewhat from Halliday's.

1. We consider that it is more revealing to extend theme to include all elements up to and including the grammatical subject of the sentence. Our investigation is concerned with the **aboutness** of the reports which, in unmarked sentences, is conveyed through the grammatical subject. We draw support for the decision to include the grammatical subject as part of theme from Chafe's (1976) comments on the function of theme, and also from Davies (1989). By including the subject with all the elements preceding it, the analysis will also give clearer insights into the ways in which thematic elements function as the point of departure and provide the orientation for the message in the rheme.

2. This analysis is restricted to themes at sentence level, i.e. of independent clauses which are initial in the sentence. Themes of bound clauses or groups have been ignored because we consider that independent clauses make a greater contribution to the discourse flow than other clauses. If a bound clause is initial in a hypotactic sentence, the whole of the bound clause is treated as thematic.

3. Sentences with existential subjects–*it* and *there*–were considered to be of special significance. However, these items and the following *be* verbs are empty of ideational content. They are only weakly thematic because the grammar requires them to be fixed in sentence initial position, and it is not a matter of choice. Therefore, the elements following these existential subjects, i.e. the first ideational elements, were taken as theme, for example *evidence,* in the following example.

> *There is also evidence that material response to stimulation can affect the foetal heart rate.* [underlining added]

ANALYTICAL PROCEDURES

1. Themes were identified by picking out the grammatical subject of the sentences as the obligatory element and then including all items preceding it–the textual, interpersonal, and ideational elements. The relative distributions of these options were calculated.

2. An important objective of the study was to investigate the functions of the typical thematic structures and combinations of different elements.

3. The term **adjunct** is interpreted broadly. We treat the combination of a preposition and non-finite clause as a special class of prepositional phrase rather than as a class of subordinate clause.

THEMATIC CATEGORIES

The inclusion of subject in theme allowed us to categorize themes of reports in terms of the kind of participant chosen for subject position. It is the choice of thematic elements that determines the form of the reports and therefore can provide a basis for categorizing the reports.

Three main options open to the writer in the choice of theme can be identified on the basis of the type of participant subject which forms the headword in the thematic element. These are:

A. Choice of **agent** as headword of the theme. This refers to the thematic choice of the human agent of the process being reported.

B. Choice of a **text reference term** as headword of the thematic unit. This refers to a limited number of metalingual terms which are used to (i) describe the source from which the reported information has been abstracted (e.g. *other studies*), or (ii) label the rhetorical function of the stretch of language to which they refer (e.g. *hypothesis, conclusion, finding*).

C. Choice of a **content term**. The label content term refers to the choice of an item of the scientific content for headword in the nominal in theme position. This is closely associated with a class of reports that we term **averred reports.**

Within these three main choices for theme, variations are created when textual, interpersonal, or ideational elements in the form of circumstantial adjuncts work in combination with the subject headword. First position in theme structure can be taken up by an adjunct which specifies the circumstances under which the participant was involved in a process. These adjuncts provide a context by giving the reader a temporal, locational, or situational framework for what follows in the rest of the sentence. Conceivably, the frameworks created by such adjuncts might extend over a stretch of text beyond the limits of the sentences in which they occur. For the sake of brevity, only the main categories for thematic choice are described below, although analysis at a more delicate level was carried out.

AGENT AS THEME

Patterns of Distribution

Of the 129 reports, 51 or 38.5% had an agent headword. Agent themes can take one of two forms. One possibility is that the name of the researcher is specified as agent of the process. If more than two researchers are involved, generally one name followed by *et al.* is used, e.g. *Morgan et al.* Another possibility is that a generalized term is used for several researchers. The choice of a generalized term is determined by the fact that reference is being made to the authors of a number of different publications. Because of this, the *et al.* form cannot be used, and it is also not possible to name all the authors involved in the running text, though, of course, the full reference is specified in the bibliography. Such terms are generally preceded by quantifiers such as *many, several.*

By themselves or in combination with circumstantial and textual elements, the distribution of agent themes can be represented as in Diagram 1.

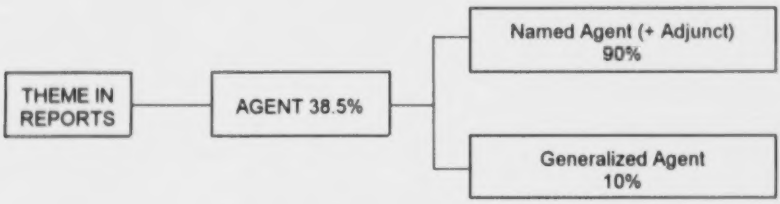


Diagram 1. Distribution of agent themes.

Discourse Functions of Reports with Agent Themes

The most frequent choice for theme in reports, i.e. the named agent, seems to co-occur with a limited number of discourse features which are described below.

Limited framework. In about 28% of reports with named researcher, the named researcher is preceded by an adjunct as the first element of theme. This adjunct serves to restrict the circumstances for interpreting the argument in the rheme or the message of the report. The following example illustrates how this works.

> *In exposing four psychosomatic groups (rheumatoid arthritics, tension headache sufferers, migraneurs and hypertensives) to exercise, Anderson found that the more unpleasant a subject reported the stress to be, the lower that subject's physiological level of activation also tended to be.* [underlining added]

The underlined adjunct/participial bound clause in the report above is fronted as it has the function of specifying the limits within which the reported information claims to apply. It describes the experimental procedure, which is not so much what the writer is

interested in communicating, but what is necessary for the reader to be able to interpret the finding which is the point of the message. It provides the specific circumstances for which the findings have applicability or validity. Specifying this kind of limiting circumstance results in a narrowing down of the information being presented. At the same time, the adjunct/participial bound clause has an implicit agent, i.e. the one who exposed the four groups. The reader's inference of an implicit agent creates an anticipation that there will immediately be more specific details telling the reader who the agent is and what the limiting circumstances apply to. The data shows that when text reference terms are in theme position, such circumstantial adjuncts do not co-occur.

Generalization in the immediately preceding text. There is a definite tendency (31% of reports) for a generalization to be present in another sentence immediately prior to a report with a named researcher in theme position, when there is no circumstantial adjunct and sometimes when a circumstantial adjunct is also present. This does not refer to a generalization in the circumstantial adjunct itself when such an adjunct is present. The report with named researcher provides details or serves as an example of the generalization. The report below illustrates how this works in the data.

> *Its etiology is unknown, although several theories have been put forth to explain it. Raynaud hypothesized an overactivity of the sympathetic nervous system leading to an increased vasoconstrictor response to cold [2] while Lewis postulated a local fault in which precapillary resistance vessels were hypersensitive to local cooling [3].*

The bound clause in the first sentence is a general preview statement, and it requires realization of its particulars in the form of examples. Such examples/particulars usually have named researchers as first thematic element. When specifics are predicted by a general projecting statement, they cannot take the form of reports with text reference terms as theme as these are not sufficiently specific to meet the requirements of the general statement.

Basis for a claim in preceding context. Approximately 30% of reports with named researcher as theme were functioning as the basis for a claim in the preceding context. In these cases, the first member of the relation tends to be a highly tentative claim made by the writer to account for a particular observation or result obtained earlier. What follows is the basis for the speech act of making the claim. This can be glossed as "I can say this because researcher X has shown Y." The predicted basis thus has to be a reference to a specific research experiment or study either by the writer in a previous work or by another researcher. In order for the report to function as a basis for the speech act of making a claim, it is also necessary for agency to be specified in the report. Its strength as a basis lies in the fact that it is in an independent source, and this has to be emphasized by making the agent the thematic element. If the agent/named researcher is omitted, it becomes more difficult for the reader to perceive the relation of the report as a basis for the claim. The example below illustrates the thematization of named reporter in a report in a Claim-Basis relation.

> *1. It appears that the two scales may differ in terms of their sensitivity. 2. Buros (32) suggests that the reliability of the POMS reflects its relative lack*

of sensitivity to changes of state, as opposed to more stable traits, and thus may indicate that the test does not really measure fluctuating affective states.

In sentence 1 above, the writer makes a tentative claim to account for results obtained using the two scales, POMS and the Nowlis. To justify making such a claim–to show that it is not unreasonable to suggest that the two scales may differ in their sensitivity–in sentence 2, he describes the findings of another researcher which support his own claim. This same effect would not be achieved if the report were presented in averred form and without the reporting clause, so that it reads:

The reliability of the POMS reflects its relative lack of sensitivity to changes of state, as opposed to more stable traits....(32).

When this version is juxtaposed with the claim in sentence 1, the Claim-Basis relation is no longer evident, and the discourse becomes incoherent. It is the thematization of the researcher in the reporting clause which allows the discourse relation to be perceived.

TEXT REFERENCE TERM AS THEME

Patterns of Distribution

Of the 129 reports, 32 or 25% of the total had an text reference term as subject. A distinction is made between text reference terms which have an anaphoric function, such as test results, and text reference terms that are non-anaphoric, e.g. *other studies*. Adjuncts sometimes co-occur with text reference terms. The distribution of text term thematic elements is represented in Diagram 2.

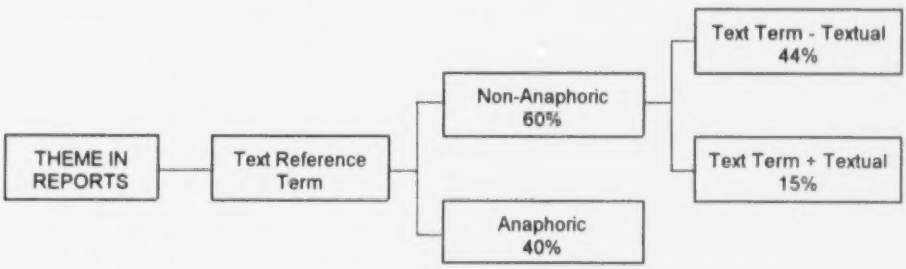


Diagram 2. Distribution of text term themes.

Text reference terms are a significant option for theme in reports, although not as frequent in distribution as agent headwords. A high proportion of the text reference terms are anaphoric and relate to the preceding discourse. They generally have fronted deictics, e.g. *such, these,* but no adjuncts. It is hypothesized that the absence of such adjuncts has to do with the clause-relating function of anaphoric text reference themes. They serve to carry forward a report in order to elaborate on it or else to set up a relationship with another report. This aspect of the functions of theme will be dealt with in the next section on

clauses-relating functions of theme. It appears that adjuncts preceding the anaphoric text themes would interfere in some way with their clause-relating function.

Discourse Functions of Reports with Text Reference Term Themes

We have suggested that text reference terms which are anaphoric have a clause-relating role that will be discussed below. When non-anaphoric text terms are in the plural form, the reports in which they occur are generalizations or summarizing statements. The text terms chosen are either *studies* or *research*. Although it would have been possible to have the plural form of the agent (e.g. *researchers, investigators*) in subject position, in place of the text term in the generalizing/summarizing reports, interestingly this does not occur. Such plural forms are generally found only in the more specific supporting reports.

CONTENT TERM AS THEME

Patterns of Distribution

Of the 129 reports, 33 or 25% had a content term in theme position. Approximately half of them occurred as the sole element of the theme, while the rest were mainly preceded by a textual adjunct. The types of content themes are represented in Diagram 3.

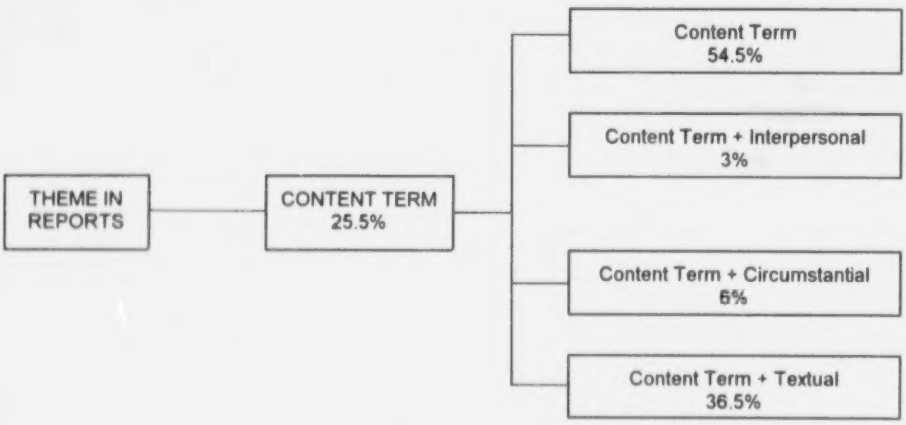

THEME IN REPORTS
CONTENT TERM 25.5%
Content Term 54.5%
Content Term + Interpersonal 3%
Content Term + Circumstantial 6%
Content Term + Textual 36.5%

Diagram 3. Distribution of content term themes.

This clearly shows that interpersonal and circumstantial adjuncts were quite insignificant as choice, with only one and two occurrences respectively. When some item of the scientific content is thematized, the resulting report falls into one of two types. Either it is an **averred report** in which there is no reference to the source of the reported information either by a reporting structure with a reporting verb or a reporting adjunct, i.e., what we have is a report by footnote. Or it is a **passivized report** in which reporting structure is evident but there is no reference to the agent/reporter who is the source of the

reported information. The content is split so that after the theme elements, the passive form of the reporting verb is interposed. This is then followed by the rest of the content. An example is given next. The content terms have been put in wing brackets.

> *{The vasopastic attacks of Renaud's disease} are thought to be precipitated by cold, emotional stress, or a combination of the two [4].*

Discourse Functions of Reports with Content Term Themes

Content themes seem to be associated with the content in the rhemes of the preceding sentence(s). This suggests that the choice of a content theme as opposed to an agent theme or a text reference theme might be motivated by the need to maintain thematic continuity in one of its manifestations. The example which follows helps to illustrate the point being made.

> *1. More importantly, living and working environments which involve stressful confrontations and demands upon the individual are often [1-4], but not always [5], associated with increased incidence of hypertensive disease in humans. (Rep B4) 2. The environments that are associated with an increased risk of hypertensive disease have been characterized as posing constant threat and uncertainty [1].*

Report B4 above has a content theme which is derived from the preceding report and summarizes and carries forward the information that certain kinds of environment are associated with an increased risk of hypertensive disease. All this information is contained in the theme so that it serves as the take-off point for the new message in the rheme, i.e., that these environments have been characterized as posing threat and uncertainty.

The point here is that the choice of the content theme in Report B4 was necessary and that the other options of an agent theme or a reference theme were then not available. Since the writer wanted to say something further about the reported information in Reports B2 and B3, it was necessary for him to retain items of the content of the previous sentence in a linear thematic progression. We can see how the coherence of the text as a whole is disturbed if we select a different kind of theme, e.g. agent as theme, as illustrated next in a modified version of the previous quotation.

> *More importantly, living and working environments which involve stressful confrontations and demands upon the individual are often [1-4], but not always [5], associated with increased incidence of hypertensive disease in humans. Researchers have [research has] characterized the environments that are associated with an increased risk of hypertensive disease as posing constant threat and uncertainty.*

In this changed version, we are being told something about researchers or about research and not about the environments associated with an increased risk, as in the original version. There is a need, then, to retain as theme what has been given in the previous sentence and it is this that helps to determine the choice of a content theme.

The thematic choice we have described so far for reports in general are represented in Diagram 4 below. Although this diagram describes the actual choices made, we suggest that it is closely relatable to a systematic network representing the potential choices available to the writer. Note that in this diagram, as well as in those above, percentage figures treat the category to the left as 100% base. For example, Named Agent is 90% of Agent themes and not of reports as a whole.

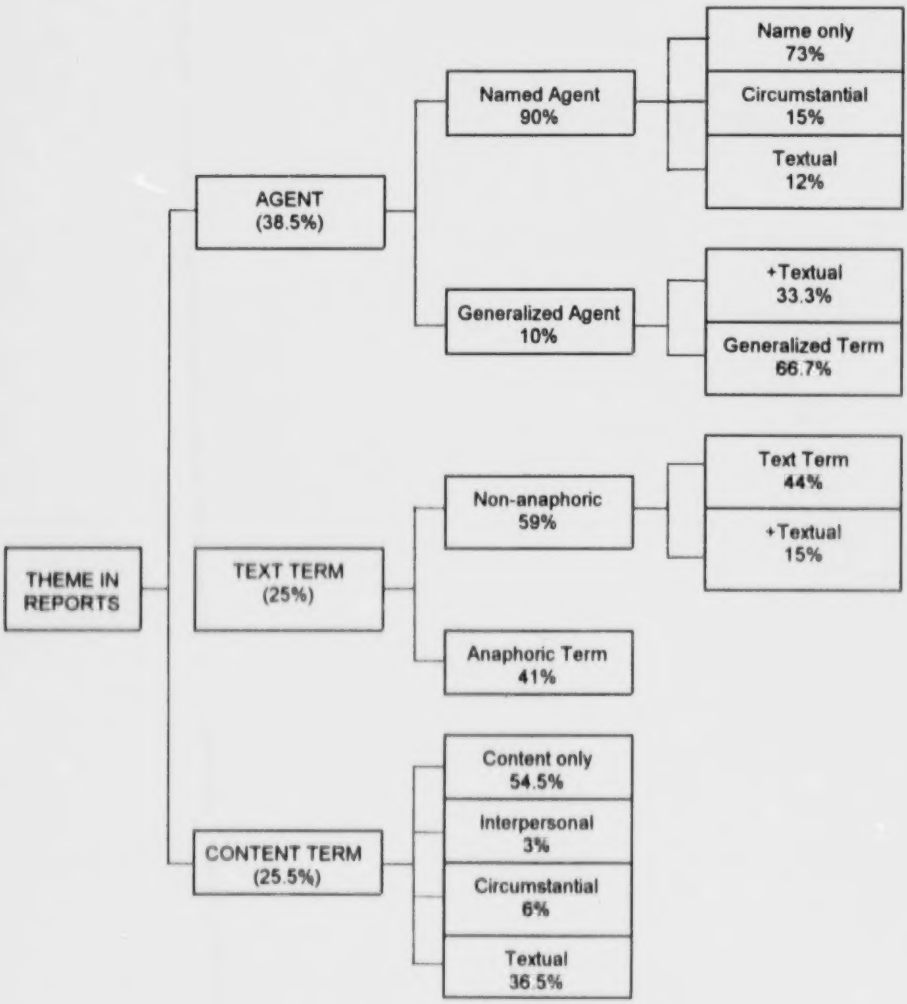


Diagram 4. Summary of thematic choices available to the writer.

BOUND CLAUSE AS THEME

Patterns of Distribution

In a small number of the reporting sentences (7 out of 129), the choice for theme was a bound clause. Sometimes the thematized bound clause was a writer comment, while the rest of the sentence, the rheme, was the report. Another pattern was for the report itself to take up the whole theme. It was connected to a writer comment in the rheme. A third possibility was for one report to occur as the bound clause and another report to be the free clause in the same sentence. These choices for bound clause as a theme can be represented as in Diagram 5.

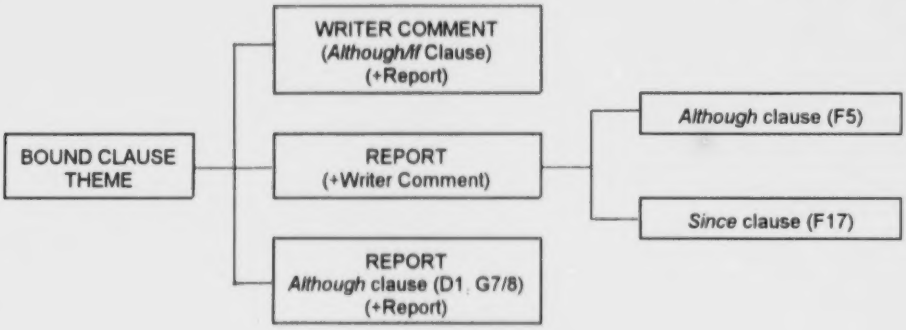


Diagram 5. Choices available for bound clause themes.

Discourse Role of Bound Theme

Information in fronted bound clauses in reports is often new information just like the information in the free clause. Rather than present them as two independent clauses linked by a sentence connector, the writer can present one as being of subordinate status relative to the other. The choice of bound clause as theme is, thus, seen to be determined by the need to specify two pieces of information and, at the same time, to mark the relation of one to the other as being of subordinate status. Once the choice for bound clause has been made, it then serves as the point of departure for the free clause which follows.

PREDICATED THEME

Patterns of Distribution

Approximately 10% of the reports had a predicated thematic structure, i.e. with the form *it* + *be* or *there* + *be*. The network of options available with predicated themes is represented in Diagram 6.

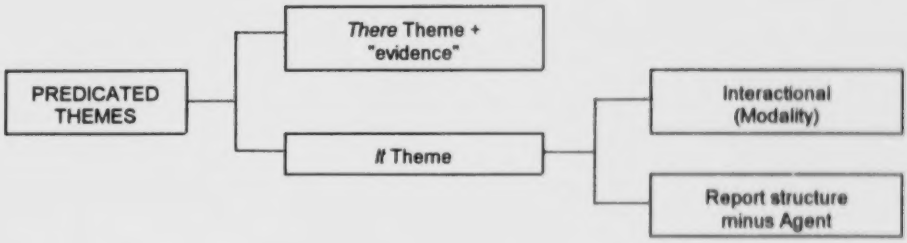


Diagram 6. Choices available with predicated themes.

Discourse Role of Predicated Theme Reports

This form is used as a device to avoid having old/given information at the beginning of the report. If the writer wishes to foreground the new information, s/he can do this by having the empty subject *there* in thematic position. In the data studied, this device is adopted in order to foreground particular kinds of information.

To assert the existence of evidence. The predicated *there* subject seems to be used when the writer is arguing for the existence of evidence of a certain kind in connection with some point s/he is making. These themes co-occur with nominals like *evidence* and *support* as in, *There is increasing support for the hypothesis.*

In these structures *there* takes up the given position in the sentence. Since it has no informational value, the attention falls on the complement part. In this way the message in the rheme is foregrounded. The following example will help to make this clearer.

> *1. Chronic bronchitic patients do seem to suffer from high levels of psychiatric disorder and a close liaison between chest physicians and psychiatrists or clinical psychologists may contribute to the effectiveness of patient management.*
> *2. There is some evidence that alleviation of psychiatric symptoms is associated with a reduction in breathlessness [14].*

Sentence 1 above is a tentative claim by the writer. He then brings in evidence in the form of a report as the basis for making the claim. The predicated structure allows the foregrounding of the word *evidence* and the clause qualifying it, so that the relationship between the two sentences as claim and supporting evidence is highlighted. The semantics of the lexical items *evidence* and *support* carry an additional element of meaning which is not conveyed by other text reference terms, such as *findings, research,* and *studies.*

To emphasize modality, i.e. possibility. The following report exemplifies the way in which an *it*-predicated theme has the role of emphasizing modality.

> *It may be that patients show a form of expectancy learning, in which "physiological responses are brought.....under the influence of environmental*

stimuli when events occur closely in time in a highly predictable relationship" [26].

In the above, the writer uses the report as part of his explanation for some results that seem to be anomalous. He is offering the explanation very tentatively and this effect is achieved by predicating the modality as *It may be*. The effect of tentativeness is further increased by inclusion of part of the reported information as direct speech within the indirect speech.

The data has indicated a general absence of lexical modal elements such as *possibly* in thematic position. When modality has to be shown in the reported proposition it is generally in non-thematic position, as in: *Thus, expressiveness tends to moderate physiological responsivity...*

To omit agent as subject in a report. The thematic element in some reports is the form *it + has been shown/suggested.* This structure enables the writer to omit mention of the agent as subject in theme position and yet maintain the report structure if sh/he does not want to present it as an averred report, i.e. one which the reporting writer fully endorses. An example is given below.

1. This test showed that the exercise group scored significantly better on all three parts of the test following exercise.
2. No change was obtained in the control group.
3. It has been suggested that naming a word is an automatic process whereas the name of a hue is the result of a conscious effort to choose and say the same of a colour.

In this example, the message in sentences 1 and 2 states the results of the test. In the report in sentence 3, the writer wishes to introduce a research finding that has relevance to the results obtained in the test, i.e. that might help to explain them. As such, he does not want to make the researcher the point of departure. The sentence is not so much about what the researcher has done as about what throws light on the results described in sentence 1.

CONCLUSION

This paper has discussed the way in which the choice of theme affects the syntactic form of the reports. The notion of theme used here is an extended one which includes the grammatical subject of the clause as it is more likely to give information on the "aboutness" of reports.

It was suggested that a typology of reports based on participant subject in the theme element can be drawn up. Reports were categorized as having (a) agent themes, (b) text reference themes, and (c) content term themes. With these three main choices for theme, variations are created when textual, interpersonal, or ideational elements in the form of circumstantial adjuncts work in conjunction with the subject headword.

Additional thematic choices are bound clause and predicated *it* and *there*. The thematic choices for reports in terms of their correlation with discourse features were discussed. Where there is a limiting circumstantial adjunct as initial element, the choice for the headword of the theme is an agent rather than a text reference term or a content term. Also it was noted that an agent theme is often preceded by a generalization in the prior context. Reports with anaphoric text term themes are generalizations or summarizing statements. It was also noted that the choice of content term themes might be motivated by the need to maintain thematic continuity. Predicated themes were seen to have the discourse functions of asserting the existence of evidence, emphasizing modality, or omitting the agent as subject.

AUTHORS

Dr. Sarah Thomas is a lecturer at the Science University of Malaysia. Her major area of interest is discourse and genre analysis. Thomas Hawes is a lecturer with the Centre for British Teachers in Malaysia. His major areas of interest are discourse analysis, and language and Ideology.

REFERENCES

Bley-Vroman, R. & Selinker, L. (1984). Research design in rhetorical/grammatical studies: A proposed optimal research strategy. *English for Specific Purposes.*

Chafe, W. (1976). Givenness, contrastiveness, definiteness, subjects, topics and point of view. In C. Li (Ed.), *Subject and topic.* New York: Academic Press.

Crookes, G. (1986). Toward a validated analysis of scientific text structure. *Applied Linguistics, 7,* 7-70.

Davies, F. (1989). Reading between the lines: Thematic choice as a device for presenting writer viewpoint in academic discourse. ELR seminar paper. The University of Birmingham.

Dudley-Evans, T. (1986). Genre analysis: An investigation of the introduction and discussion sections of M. Sc. dissertations. In Coulthard (Ed.), *Talking about text.* ELR: The University of Birmingham.

Halliday, M. A. K. (1976). Theme and information in the English clause. In Kress, G. (Ed.), *Halliday: System and function in language.* Oxford: Oxford University Press.

Halliday, M. A. K. (1985). *An introduction to functional grammar.* London: Arnold.

Jacoby, S. (1987). References to other researchers in literary research articles. *ELR Journal, 1,* 33-78

Lackstrom, J, Selinker, L., & Trimble, L. (1972). Grammar and technical English. *English Teaching Forum, 5,* 3-14.

Leech, G. N. (1971). *Meaning and the English verb.* London: Longman.

Oster, S. (1981). The use of tenses in reporting past literature. In Selinker, Tarone, & Hanzeli (Eds.), *English for academic and technical purposes.* Newbury House.

Swales, J. (1990). *Genre analysis.* Cambridge: Cambridge University Press.

Tadros, A. (1985). *Prediction in text.* ELR: The University of Birmingham.

Tarone, E., Dwyer, S, Gillette, S., & Icke, V. (1981). On the use of the passive in two astrophysics journal papers. *The ESL Journal, 1,* 123-140.

Thompson, G, & Ye, Y. Y. (1991). Evaluation in the reporting verbs used in academic papers. *Applied Linguistics, 12, 4.*

Symposium on

Phonology and Pronunciation

IDEAL 7, 1994

CONNECTED SPEECH MODIFICATIONS IN THE ENGLISH OF JAPANESE ESL LEARNERS

Janet Anderson-Hsieh, Timothy Riney and Kenneth Koehler

After a review of literature on connected speech modifications in English, this paper reports on a study of the connected speech modifications that five intermediate-proficiency (IP) and five high-proficiency (HP) Japanese ESL learners used in sentence reading and spontaneous speech tasks, and compares their performance to that of five native speakers (NS) of American English. Speech samples from the fifteen subjects were transcribed phonetically and analyzed for linking, flapping, vowel reduction, and consonant cluster simplification. The results indicate that while the HP group approximated the performance of the NS group in several categories, the IP group often lagged far behind. Furthermore, the IP group used forms predicted by native language transfer theory more often than did the HP group. All three groups produced significantly more modifications during the spontaneous task than during the sentence reading task. The report concludes that language proficiency, native language, and style shifting are important factors affecting Japanese ESL learners' connected speech.

INTRODUCTION

Connected Speech Simplifications of Native Speakers

In the pronunciation of English it is important to distinguish the *citation* form and the *connected speech* form of a lexical item. Citation forms occur in isolated words and in words under heavy stress in sentences delivered in a slow, careful style (Lass, 1984). Such forms closely match the pronunciation predictions derived in generative phonology by applying phonological rules to underlying phonological representations (Chomsky & Halle, 1968). By contrast, connected speech forms often show a variety of simplifications (Brown, 1977; Lass, 1984, Dalby, 1986; Hieke, 1987; Temperley, 1987) which are not so easily predicted by the phonological component of the language.

Lass (1984) observes that the disparity between citation forms and connected speech forms is sometimes so great that it appears that the speaker possesses two different languages. He attributes connected speech simplifications not only to surrounding sounds but also to speaking rate, the formality of the speech situation, and other social factors related to speech variation:

> What appears to happen is that the faster and more casual speech becomes, the less it is 'focal' to the speaker's concern, the less attention he pays to it. Therefore, the inertial properties of the speech apparatus tend to take over, as if it were a

> 'gravitational' effect where decrease of attention leads to decrease of effort. To put it crudely, things tend to get done the easiest way, movements flow along a path of least effort. As attention decreases, so does control; and both distinctiveness and distinction decrease (Lass, 1984, p. 297-298).

The major characteristics of connected speech that Lass identifies are (1) more frequent *assimilation*, in which the distinctiveness among adjacent sounds is lost; (2) a blurring of boundaries and a reorganization of phonetic material; (3) *lenition*, or a lesser degree of closure in the vocal tract, (4) *vowel reduction*, by which is meant vowel centralization and shorter vowel duration, as well as possible vowel loss leading to the syllabification of consonants, (5) a shorter duration of long sound segments, and (6) the deletion of consonants in consonant clusters.

Sometimes the restructuring can be quite radical, as when phonotactic constraints are violated. For example, although the sequences [ts] and [ks] are not allowed word-initialiy in English, Lass (1984, p. 299) reports the following in his own casual speech:

(1) [tsɪimz] for *it seems*
(2) [kstrɪimlɪi] for *extremely*

Radical restructuring can also modify the form used to express a grammatical meaning. Lass (1984:301), for example, has observed that in very casual speech a speaker may express the definiteness of a noun by lengthening its first segment rather than by using the definite article.

(3) Put [mɪlk] on the table. [= milk]
Put [mːɪlk] on the table. [= the milk]

The social distance of interlocutors also affects the frequency with which such modifications occur. The more similar the speaker and listener are in terms of social group and background knowledge of the topic under discussion, the greater the listener's ability to reconstruct the meaning of the message, and therefore the less attention the speaker is required to pay to clear articulation.

Hieke (1987) discusses many of the same connected speech phenomena as Lass (1984), although he uses the term *absorption* for connected speech modifications and sets up different categories for classifying them. Of particular interest in the present study is his discussion of *linking*, or resyllabification, which he views as evidence of the speaker's tendency to avoid hiatus in casual speech. In the three types of linking he describes--consonant attraction, glide attraction, and release attraction--a segment in word-final position is reassigned to the first syllable of the following word. Consonant attraction is illustrated in the following phrase, where a period [.] represents a syllable boundary.

(4) [græb.dɪt] for *grabbed it*

Ambisyllabicity, another syllabification process that Hieke (1987) and especially Trammel (1992) discuss, occurs when a consonant cannot be assigned exclusively to one

syllable or another but is shared by both. In the following example parentheses identify the ambisyllabic segments.

(5) [ʔɑɪ.gɛ(s)ɪ(ɾ)ɪz] for *I guess it is.*

Although some controversy surrounds ambisyllabicity (Trammel, 1992), the present study accepts the notion and treats all ambisyllabic segments at word boundaries as examples of linking.

Brown (1977) also discusses connected speech and presents a detailed description of modifications resulting from assimilation and deletion. She also includes an account of vowel simplifications characteristic of the RP (received pronunciation) variety of British English and the reduction of visual clues in connected speech.

Dalby (1986) investigated deletion of unstressed syllables in the connected speech of native speakers of American English. He transcribed and analyzed television news interviews and data from three native speakers who produced slow and fast versions of a set of test sentences. His results show that the rate of weak syllable deletion increases as speaking rate increases. He also found that the position of an unstressed syllable in a word and the segments surrounding it influence the rate of deletion.

Connected Speech Simplifications in ESL Pronunciation

Teaching Materials. ESL literature on pronunciation instruction has addressed the issue of connected speech modifications but is not unanimous on how much to teach to ESL learners. On one side, Brown (1977) argues for teaching connected speech modifications fairly early for comprehension purposes but not for production purposes. Instead, ESL learners should be left to acquire them on their own when they reach a more advanced stage of language development. On the other side, Temperley (1987) argues that linking and certain types of consonant deletion should be taught for production. Avery and Ehrlich (1992) state that it is also important to teach vowel reduction and certain types of assimilation.

Authors of recently published ESL pronunciation textbooks (Chan, 1987; W. Dickerson, 1989; Gilbert, 1992; Dauer, 1993; Grant, 1993; Lane, 1993) seem to take the latter position, including in their texts production exercises on some of the same connected speech modifications discussed above. For example, Dauer (1993) has production exercises for linking, vowel reduction, syllabic consonants, contractions, and consonant cluster reduction.

The inclusion of such simplifications for production practice is probably due to the greater emphasis in ESL pronunciation instruction on suprasegmentals in the last decade or so (Gilbert, 1984; Pennington & Richards, 1986; Wong, 1987; W. Dickerson, 1989; Anderson-Hsieh, 1990, 1992). The assumption is that ESL learners who use some of the same connected speech simplifications that native speakers use can more readily approximate native-like patterns of timing, stress, and rhythm (W. Dickerson, 1989). However, it is important to note that none of the pronunciation textbooks on the market include exercises on the more radical types of restructuring that Lass (1984) describes.

Research. In spite of the importance of connected speech in recent ESL pronunciation materials, little research has documented whether ESL learners actually acquire connected speech modifications. The only aspect of speech modifications to receive much attention has been the simplification of consonant clusters through two competing strategies: *consonant deletion* and *vowel epenthesis*. Consonant deletion is the strategy of native speakers of English in which they drop one member of a consonant cluster. Vowel epenthesis, a strategy sometimes used by children acquiring English as their first language (Oller, 1974) and by ESL learners from certain language backgrounds, involves inserting a vowel before, after, or in the middle of a consonant cluster. Although vowel epenthesis at first glance would seem to run counter to simplification because it adds rather than deletes a sound segment, it is considered to be a simplification process because it breaks up a consonant cluster into two syllables which are easier to pronounce than the original sequence of consonants.

Several empirical studies have investigated syllable simplification in learners from different language backgrounds (Tarone, 1980; Broselow, 1983, 1984; Anderson, 1983, 1987; Sato, 1984; Riney, 1990; Eckman, 1991). The focus of these studies has been the relevance of syllable simplification for second language acquisition theories. For example, Anderson (1987) has shown that while native language transfer is a major factor in the frequency of simplification and the choice of simplification strategy, language universals (Greenberg, 1978) also play a role. Canonical syllables that are universal across languages are easier to learn, while canonical syllables that occur less often are more difficult.

The only study which investigates a broader range of connected speech phenomena and compares the modifications of ESL learners with those of native speakers is by Hieke (1987). He investigates flapping as well as consonant cluster reduction in a group of intermediate ESL learners from unspecified language backgrounds and compares their simplifications with those of native speakers of American English using the same speaking task, namely, a paraphrase task in which speakers retell a story just heard. In his analysis of recorded speech samples, Hieke discovered that the native speaker group used flapping and cluster reduction significantly more often (approximately 30% more so) than the nonnative group.

Although Hieke's research represents an important contribution to second language phonology, his study leaves several questions unanswered. First, even though his ESL subjects represented several language backgrounds, he did not investigate the effect of the learners' native phonologies on the rate of modification and the kinds of modifications that occurred. Secondly, he did not investigate whether his subjects used other strategies besides consonant deletion, such as vowel epenthesis, to simplify consonant clusters. Thirdly, since his study looked at only intermediate ESL learners, the extent to which advanced ESL learners approximate native-speaker modifications is not known. And finally, by restricting his data to casual, spontaneous speech, Hieke did not investigate the extent to which style shifting (Labov, 1972) affects the connected speech modifications of ESL learners, even though style shifting has been shown to operate in other aspects of the ESL learner's speech (L. Dickerson, 1974; Schmidt, 1977; Beebe, 1980; Major, 1987).

The purpose of the present study is to investigate connected speech modifications in one group of ESL learners–native speakers of Japanese–at both the intermediate and advanced levels of proficiency and to compare their modifications with those of native speakers of American English on the same speaking tasks–a sentence reading task and spontaneous

speech. Japanese ESL learners were chosen because the canonical syllable structure of Japanese differs greatly from that of English, and Japanese does not reduce vowels in the same way that English does. These contrasts between Japanese and English suggest that Japanese ESL learners are likely to modify certain aspects of connected speech differently from the way that native speakers of English do.

Relevant Contrasts between English and Japanese Phonology

While English allows consonant clusters of three members in word-initial position and clusters of four members in word-final position, Japanese allows only consonant-glide clusters word-initially and no clusters in final position. In fact, only one consonant appears in word-final position, namely, /n/, which alternates in certain contexts with the /ŋ/ (Vance, 1987). This radical difference in syllable structure suggests that Japanese ESL learners are likely to simplify English syllables even more often than native speakers of English.

However, whether Japanese ESL learners will simplify clusters through consonant deletion is another question. When foreign words with consonant clusters are incorporated into the Japanese language, they are simplified in the Katakana syllabary by inserting vowels between any adjoining consonants so that their syllable structure conforms to the canonical syllable structure of Japanese. Thus when speaking English, Japanese learners may show a tendency to simplify clusters by inserting vowels. This is the view apparently taken by Thompson (1987), who claims that the major simplification strategy used by Japanese ESL learners is vowel epenthesis. He illustrates the difficulties Japanese ESL learners have with connected English speech in the following sentence from a hypothetical Japanese learner (p. 215). All of the consonant cluster simplifications involve vowel epenthesis rather than consonant deletion.

(6) *They'll have to make a bigger effort in future.*
[zeɪru hɑbu tsu: meɪku ɑ biŋɑ: eho:to i:: çɯ:tʃɑ:]

On the other hand, a study of bimorphemic clusters in the spontaneous speech of Japanese ESL learners (Saunders, 1987) shows that they use both consonant deletion and vowel epenthesis as strategies for simplifying the clusters. It is not known if this pattern of simplification holds for monomorphemic clusters as well.

In addition to contrasts in syllable structure, Japanese and English also treat unstressed vowels differently. In Japanese, vowels that occur in voiceless contexts are often devoiced, and vowels are sometimes deleted (Vance, 1987). However, vowels are never centralized as they are in English. This would seem to predict that Japanese ESL learners will tend not to centralize vowels in unstressed syllables but will devoice and delete them instead.

Research Questions

The present study poses several questions concerning the connected speech of Japanese ESL learners: (1) To what extent do intermediate- and high-proficiency Japanese ESL speakers differ from native speakers of American English in their use of connected speech modifications? (2) To what extent do intermediate- and high-proficiency Japanese speakers

differ from each other in their use of connected speech modifications? (3) What effect does native language transfer have on connected speech modifications? In particular, how does it affect the rate of vowel reduction and consonant cluster simplification and the choice of strategy for simplifying consonant clusters? (4) What is the effect of style shifting on connected speech modifications? That is, is there a difference in the rate of connected speech modifications in spontaneous speech compared to sentence reading?

Connected Speech Modifications Investigated

The connected speech modifications investigated in this study are alveolar flapping, linking, vowel reduction, and consonant cluster simplification. Each is described below.

Alveolar flapping. In alveolar flapping, an alveolar flap replaces an alveolar stop. Although flaps and stops involve closure, the duration of closure is shorter for a flap. The flap is illustrated below in two different contexts–within a word, (7), and at a word boundary, (8). In all cases, the flap is ambisyllabic.

(7) [lɛ(ɾ)ər] for *letter*
(8) [ʃʊ(ɾ)ɑɪ.pʰʊ(ɾ)ɪ(ɾ)ɑn] for *should I put it on*

Linking. As Heike (1987) has observed, linking can occur in English between two consonants, between a consonant and a vowel, or between two vowels. In consonant-to-consonant (CC) linking, in which the consonants are identical, only one consonant is realized and may be slightly prolonged, as in (9) and (10).

(9) [ðæʔ.tʰːɑɪm] for *that time*
(10) [lɛ(sː)mɪθ] for *Les Smith*

In other types of consonant-to-consonant linking, release attraction can occur, as illustrated below. In (11), the final stop of a word is released at the beginning of the following word. In (12), where the first consonant of the second word is a nasal, the release of the stop is nasal rather than oral.

(11) [ʔæʔ.tθɛt.məz] for *at Thelma's* (oral release)
(12) [ʔæ.dⁿmər] for *add more* (nasal release)

Consonant-to-vowel (CV) linking involves the assignment of the final consonant of a word to the following, vowel-initial syllable:

(13) [kɑɪn.dəv] for *kind of*

Vowel-to-vowel (VV) linking occurs when a word-final tense vowel is followed by a word-initial vowel. This kind of linking often involves glide attraction as in (14).

(14) [se.jɪt] for *say it*

Vowel reduction. Vowels that are full in stressed syllables are often reduced or centralized in unstressed syllables, as illustrated below.

(15) [yə] for *you*

Sometimes the vowel in the unstressed syllable completely disappears, eliminating a syllable or leaving a syllabic consonant, as in (16). Since such syllabic consonants are the result of vowel reduction, they are included in the vowel reduction category.

(16) [n̩] for *and*

Consonant Cluster Simplification. Two types of consonant cluster simplification to be investigated are consonant deletion and vowel epenthesis. As noted, consonant deletion is the more native strategy for simplifying clusters, while vowel epenthesis is the strategy predicted to be used by the Japanese speakers. Consonant deletion occurs when two or more consonants appear together at a syllable or word boundary, as in (17) and (18).

(17) [strẽɪ3.li] for *strangely*
(18) [læs.nɑɪt] for *last night*

Vowel epenthesis can occur in the same environments as consonant deletion as the following examples illustrate.

(19) [strəɪn.dʒi.li] for *strangely*
(20) [læs.tu.nɑɪt] for *last night*

METHOD

Subjects

The native speaker group (hereafter NS group) consisted of five native speakers of American English. Four of the speakers were native Californians and one was a native Iowan; three were male, and two were female. The Japanese speakers were selected from the population of Japanese students at International Christian University in Tokyo who take English proficiency tests as part of their requirements for admission. Their selection was based on an impressionistic judgment of their speaking proficiency. Five of the speakers were judged as having intermediate speaking proficiency and five were judged as having high proficiency. In the intermediate-proficiency group (hereafter IP group), three of the speakers were female and two were male; in the high-proficiency group (hereafter HP group) two of the speakers were female and three were male.

Materials and Procedures

Use of an abbreviated version of the SPEAK test confirmed the original impressionistic grouping of speakers. Six evaluators with some training in SPEAK test administration rated the pronunciation, fluency, and comprehensibility of the nonnative samples on a four-point scale. Each speaker received one score, computed as the mean score of the six raters on the three SPEAK subtests. The mean score for the intermediate-proficiency (hereafter IP) group

was 1.4 on a scale from 0 to 3, the scores ranging from 1.22 to 1.62. The mean score for the high-proficiency (hereafter HP) group was 2.5, the scores ranging from 2.12 to 2.80.

To elicit connected speech simplifications, the test required subjects to perform a sentence reading task and a spontaneous speech task. The sentence reading task was used to control for vocabulary, grammar, sound segments and consonant clusters, thereby making possible a more reliable comparison among the speakers. The sentences contained a high concentration of word-boundary consonant clusters, providing many opportunities for linking and consonant cluster simplification. An exercise on consonant clusters in an ESL pronunciation text (Prator & Robinett, 1985) was the source of the reading task sentences. A copy of the test is in the Appendix.

The purpose of the spontaneous speech task was to elicit a less formal speech style in order to compare certain aspects of spontaneous production with sentence reading. The subjects were instructed to speak on the topic, "the most exciting or dangerous experience that I have ever had." The spontaneous speech samples generally did not contain as high a concentration of consonant clusters as found in the sentence reading. The lack of control over vocabulary also resulted in speech samples that did not contain the same types of consonant clusters.

The authors recorded the speech samples using a high quality tape recorder and analyzed them auditorily. With the aid of the varispeech function of the tape recorder, the first and second authors transcribed the samples in moderately narrow phonetic detail. A speed reduction of 15% made it possible to identify more easily word boundary phenomena such as release attraction. When spot-checking each others' transcriptions, the authors found themselves in high agreement.

Analysis of Speech Samples

For each subject, a computation based on a count of potential and actual modifications of sentences yielded a percentage of flapping, linking, vowel reduction, and consonant cluster simplification. Excluded from the count of potential flappings, linkings, and consonant cluster simplifications were instances in which a pause (determined auditorily, not acoustically) occurred at word boundaries. A closer analysis of the linking category distinguished instances of CC, CV, and VV linking. Similarly, consonant deletion and vowel epenthesis became subcategories of consonant cluster simplification. This study, however, did not examine the length or segmental composition of the clusters.

The analysis of spontaneous speech data proceeded as described with one exception. The study limited the high-proficiency data to two hundred and fift/ syllables of continuous speech per subject but included all of the intermediate-proficiency data because each speaker produced fewer than 250 syllables.

The data served to determine the percentage of simplification in the reading and spontaneous speech of each individual in the study and of the NS, HP, and IP groups. The final step involved subjecting the data to (1) the one-way analysis of variance and the Scheffé Test to examine the differences among the three groups on all categories and (2) the t-test

for paired observations to examine the differences between two groups and between the sentence test and spontaneous task for each group (Hatch & Lazaraton, 1991).

Before reporting the results of the study, we should highlight two of its limitations. First, since the study is macroanalytical in its concern with broad categories of connected speech modifications, distinctions within each category are not examined. Thus, the reader should not assume that all of the forms in each category were modified in the same way or with the same frequency. Second, the number of subjects who participated in the study is relatively small, limiting to some extent the generalizability of the findings.

RESULTS AND DISCUSSION

Sentence Test

The bar graph in Figure 1 presents the mean percentage of speech modifications in the sentence-reading data of the NS, HP, and IP groups. The NS group displayed more linking, flapping, vowel reduction, and deletion than the HP group, and the HP group showed more than the IP group. As expected, epenthesis did not occur among the NS group. The IP group, however, used more epenthesis than the HP group.

Flapping and Linking. The analysis of variance for the flapping category was significant at the 0.0063 level ($F = 7.95$, $df = 2, 12$). The Scheffé test showed a significant difference between the IP group and the NS and HP groups ($p > 0.05$) but not between the NS and HP groups. This indicates that the HP group is similar to the NS group in the use of flapping, while the IP group has not yet mastered flapping to the same extent.

An analysis of the forms occurring in the IP group data showed a tendency to use an aspirated alveolar stop instead of the flap and to insert a glottal stop before the vowel beginning the following word:

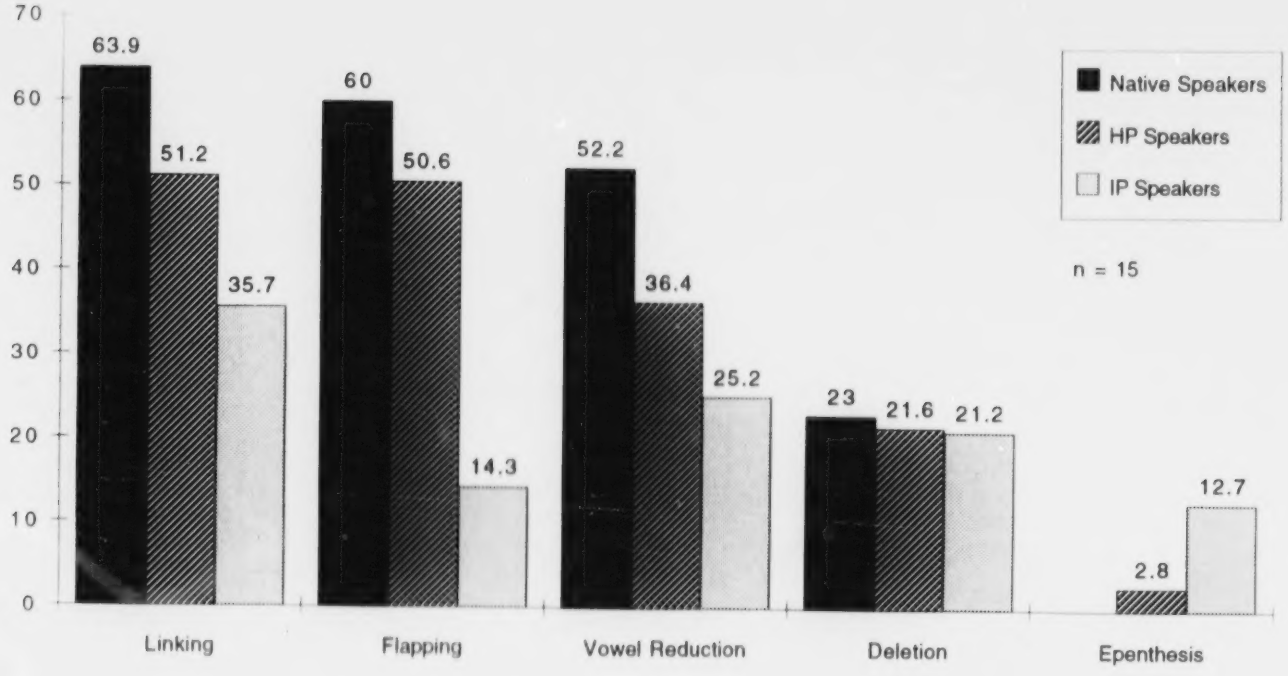
(21) [ðætʰ.ʔɔɬ] for *that all*

When the IP speakers did use flapping, it happened most often within a word rather than at word boundaries:

(22) [yunɑɪɪd] for *united*

Figure 2 presents an analysis of the CV, CC, and VV subcategories of linking. The percentage of linking in each subcategory is highest among the NS group and next highest among the HP group. Statistical analyses were done separately for each category of linking.

The analysis of variance was significant for the CC category ($F = 11.55$, $df = 2,12$, $p = 0.002$). The Scheffé test revealed the same pattern of differences that was found for flapping. Significant differences were found between the IP group and the NS and HP groups but not between the NS and HP groups, indicating that the HP group was using CC linking with a frequency similar to that of the NS group. An analysis of the forms used showed a



43

43A

Figure 1. Group Mean Percentage Rates for Linking, Flapping, Vowel Reduction, Consonant Deletion, and Vowel Epenthesis on the Sentence Test.

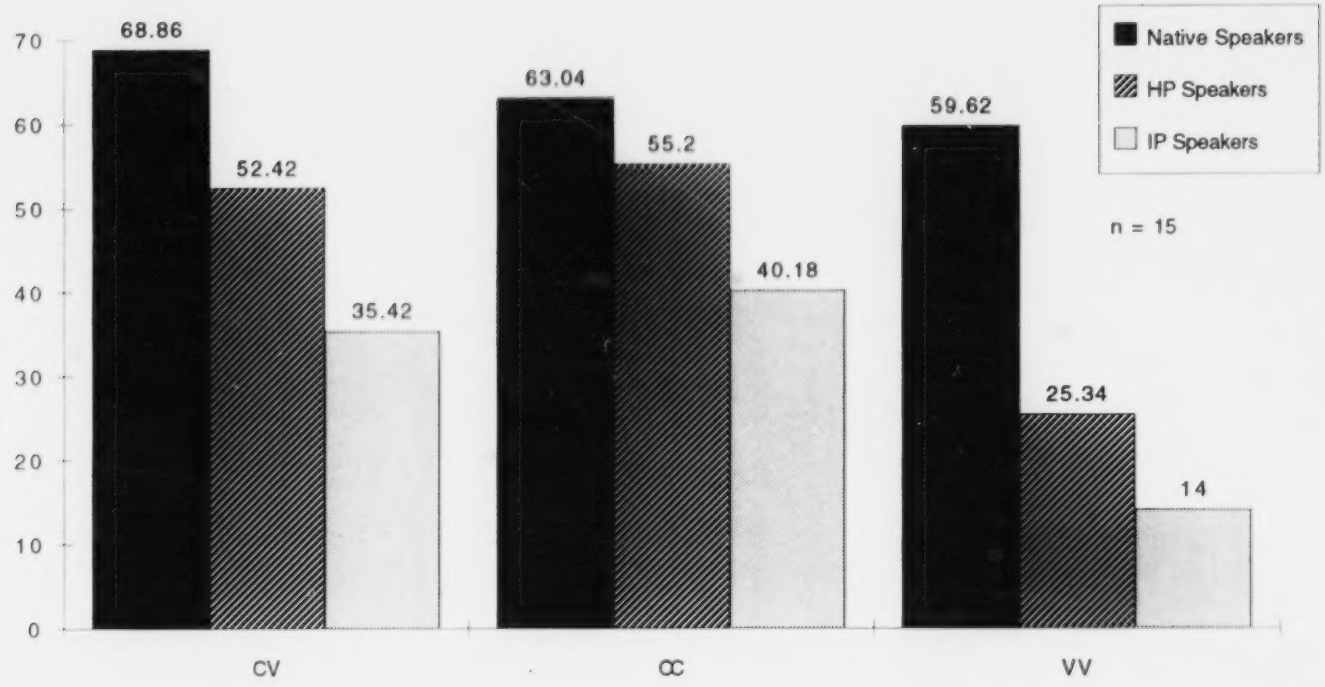


Figure 2. Group Mean Percentage Rates for CV, CC, and VV Linking on the Sentence Test.

tendency by the IP group for separate release of consonants as in (23), while the HP and NS groups more often showed release attraction as in (24).

(23) [hɜrd.ðæt] for *heard that*
(24) [hɜr.dðæt] for *heard that*

The means for the CV category in Figure 2 show a pattern similar to the pattern for the CC category, but the differences in means were only close to being significant because of larger within-group variation ($F = 3.28$, $df = 2, 12$, $p = 0.07$). An analysis of the forms used revealed that the IP group showed a strong tendency to keep word boundaries intact by inserting a glottal stop before the word-initial vowel in the second word as in (25). The HP group also showed the same tendency to insert glottal stops, although they did so less often.

(25) [ʔænd.ʔæskt] for *and asked*

The analysis of variance for the VV category was significant ($F = 5.15$, $df = 2,12$, $p = 0.02$), although the Scheffé test revealed a significant difference ($p > 0.05$) only between the NS and IP groups. The HP group was not significantly distinct from the other two groups, in spite of the large difference in means between the NS and HP groups. This lack of significance is probably attributable to the large degree of variance found. A study of the forms used by the IP group showed a strong tendency to insert glottal stops between vowels at word boundaries, as in (26). The HP group also frequently inserted glottal stops at word boundaries, although not quite as often as the IP group.

(26) [ðiʔʌ.ðərz] for *the others*

In summary, (1) the IP group generally used flapping and linking significantly less often than the NS group did, and the quantitative differences were often dramatic; (2) the HP group did not differ significantly from the NS group on either flapping or linking, although a large but non-significant difference in means surfaced in the VV linking category; (3) the HP group differed significantly from the IP group on flapping and CC linking, but nowhere else.

Thus while the HP group approached the NS group in its rate of flapping and linking, in most cases the IP group lagged behind. The analysis of forms for flapping and linking showed that the IP group demonstrated a tendency to preserve word boundaries. In CC clusters, this was accomplished by maintaining a separate release of the consonants. In CV and VV clusters, the word boundaries were maintained through the insertion of glottal stops. The HP group also inserted glottal stops before words beginning with vowels, although not as often as the IP group.

Vowel Reduction. The mean scores for all three groups on the vowel reduction category are presented in Figure 1. The analysis of variance was significant at the 0.0007 level ($F = 14.35$, $df = 2, 12$) although the Scheffé test showed a significant difference only between the NS group and the HP and IP groups. No significant differences appeared between the HP and IP groups. An analysis of the forms used by the HP and IP groups showed that both groups reduced their vowels mainly in the definite and indefinite articles. They rarely

reduced vowels in words such as *you* or *to* or in unstressed syllables in words such as *request*. This failure to reduce vowels may arise at least in part from native language transfer, since Japanese vowels retain their pure quality and are never centralized as they are in English.

It is interesting to note that the HP group was similar to the IP group on the three categories of connected speech involving vowels: CV linking, VV linking, and vowel reduction. Although the failure to reduce vowels may be due at least in part to native language influence, the failure to link word-initial vowels with other segments at word boundaries cannot be so explained. It is possible that the tendency to keep vowels intact may be related to a concern for intelligibility, although it is not clear why vowels, and not consonants, would be singled out.

Consonant Cluster Simplification. The differences between Japanese and English syllable structure raised three questions about cluster simplification. The data reflected in Figure 1 helps to answer these questions. First, is the total consonant cluster simplification rate higher for the Japanese groups than for the NS group? The simplification rate of the IP and HP groups is the combination of consonant deletion and vowel epenthesis categories, while the simplification rate for the NS group reflects only consonant deletion, since no instances of vowel epenthesis occurred.

The total rate of simplification was 33.9% for the IP group and 23.0% for the NS group The t-test revealed borderline significance ($t = 2.20$, $p = 0.059$, $df = 8$). The simplification rate for the HP group was 23.6%. No significant differences were found between the HP and NS groups. These results indicate that native language transfer influenced the total rate of simplification only for the IP group.

The second question concerned the strategy for simplification–epenthesis or deletion. Which strategy would the Japanese speakers use most often? Within each of the Japanese groups, the deletion rate was higher than the epenthesis rate, although it was significantly higher only for the HP group ($t = 7.54$; $p = 0.0017$; $df = 4$). While these results confirm the prediction of native language transfer theory that the Japanese group would use epenthesis as a simplification strategy, they do not support the prediction that it would be used more often that deletion. The results certainly do not strengthen Thompson's claim that consonant clusters in Japanese are simplified solely through epenthesis. Instead these findings match those of Saunders (1987) which showed that Japanese ESL learners use both strategies of simplification.

These results are also consistent with a study of Egyptian Arabic learners of English who showed a higher rate of deletion than epenthesis despite contrastive analysis predictions to the contrary (Anderson, 1983). This preference may arise from the fact that deletion is a more natural or universal process than epenthesis in the sense that children use it more often than epenthesis to simplify consonant clusters when acquiring their first language (Oller, 1976).

The third question about consonant cluster simplification concerned the extent to which the groups differed from each other in their rates of simplifying clusters through deletion and epenthesis. For consonant deletion, the analysis of variance revealed no significant

differences among the three groups. The consonants deleted most often by all three groups were /t/ and /d/, although this tendency was observed more often in the NS group. However, the Japanese groups also occasionally deleted consonants not deleted by the NS group, namely, final /l/, /m/, and /n/.

These results differ from the findings of Hieke (1987) in which the consonant deletion rate of the native speakers was significantly higher than that of the nonnative speakers. Since his study does not mention the native language backgrounds of his subjects, one can only speculate that the syllable structure of their native languages did not contrast as radically with English as Japanese syllable structure does.

As for epenthesis, the t-test indicated that the IP group used this strategy significantly more often than did the HP group; the differences were significant at the 0.009 level ($t = 3.46$; $df = 8$). Although contrastive analysis correctly predicted that both groups would use epenthesis as a strategy, it did not predict that the IP group would use it more often. Yet, these results agree with the earlier studies on second language phonology which have shown that native language transfer is more apparent in the earlier stages of second language development (L. Dickerson, 1974; Major, 1987).

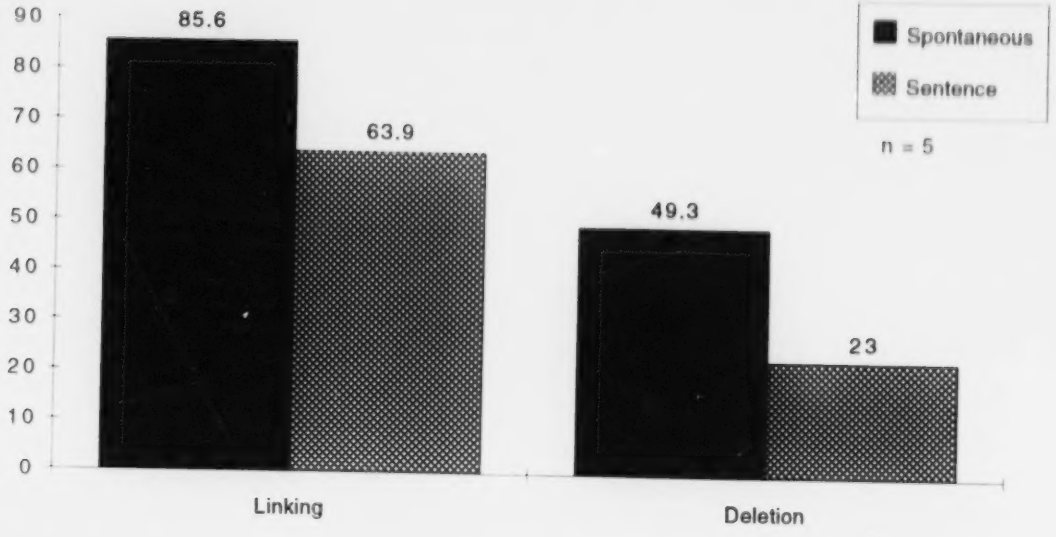
In summary, (1) the combined rate of simplification revealed a higher rate of simplification for the IP group than for the NS group; (2) the dominant strategy for simplification for both the HP and IP groups was consonant deletion, and not epenthesis; (3) no significant differences were found among the three groups on consonant deletion; (4) the IP group used epenthesis more often than the HP group. These results indicate that while native language transfer affects the overall rate of simplification and choice of strategy, it is limited in the extent to which it can accurately predict under what circumstances, at which proficiency level, and with what frequency certain forms will occur.

Sentence Task versus Spontaneous Task

Another important factor to be considered in connected speech modifications is style shifting. This study compared the sentence and spontaneous data within each group for only the linking, deletion and epenthesis categories. The paired t-test was used to determine whether the differences between means were statistically significant.

NS Group. The mean percentages of linking and deletion among the NS group on the sentence and spontaneous tasks are presented in the bar graph in Figure 3. Not surprisingly, the linking and consonant deletion rates were higher during the spontaneous task than during the sentence task. The t-test was significant at the 0.0041 level for linking ($t = 5.92$, $df = 4$) and at the 0.05 level for consonant deletion ($t = 2.8$, $df = 4$).

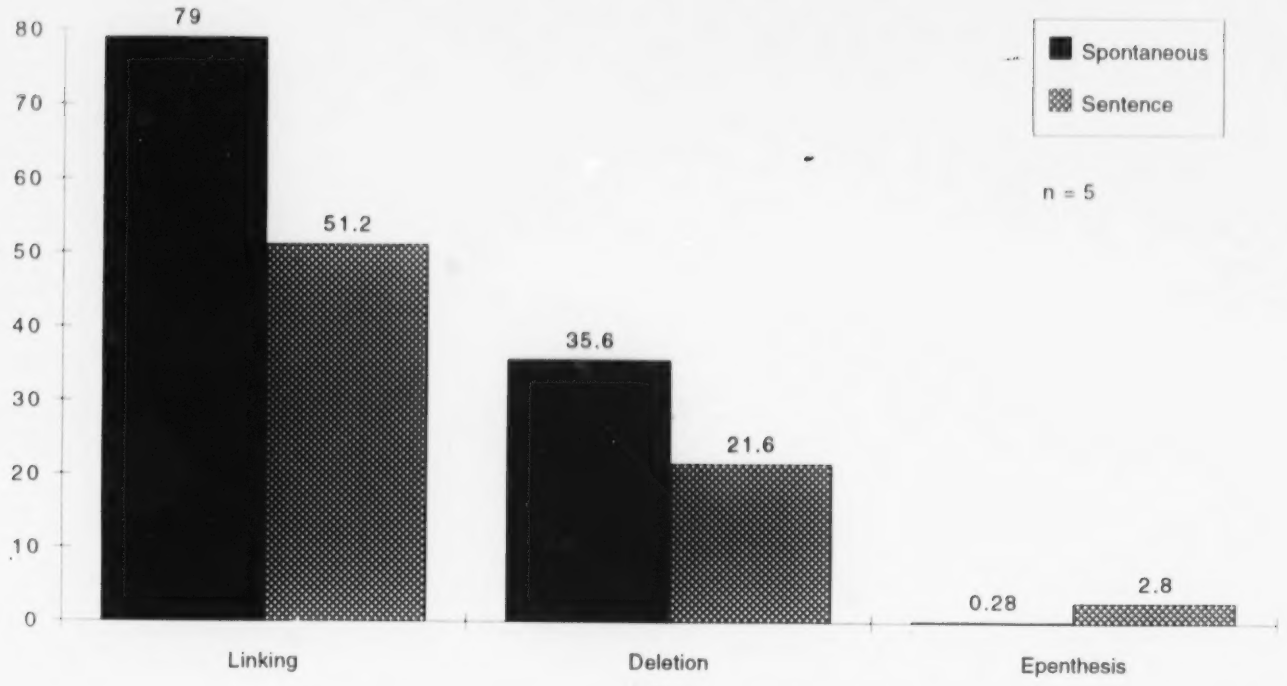
HP Group. The mean percentage scores for the linking, deletion and epenthesis among the HP group for the sentence and spontaneous tasks are presented in the bar graph in Figure 4. As in the NS group, the linking and consonant deletion occurred at a higher rate during the spontaneous task than during the sentence task. The t-test was significant at the 0.002 level for linking ($t = 7.69$, $df = 4$) and at the 0.01 level for deletion ($t = 4.16$, $df = 4$). The t-test was nonsignificant for the epenthesis category.



48

48A

Figure 3. Group Mean Percentage Rates for NS Group for Linking and Deletion on Two Tasks.



49A

Figure 4. Group Mean Percentage Rates for HP Group for Linking, Deletion, and Epenthesis on Two Tasks.

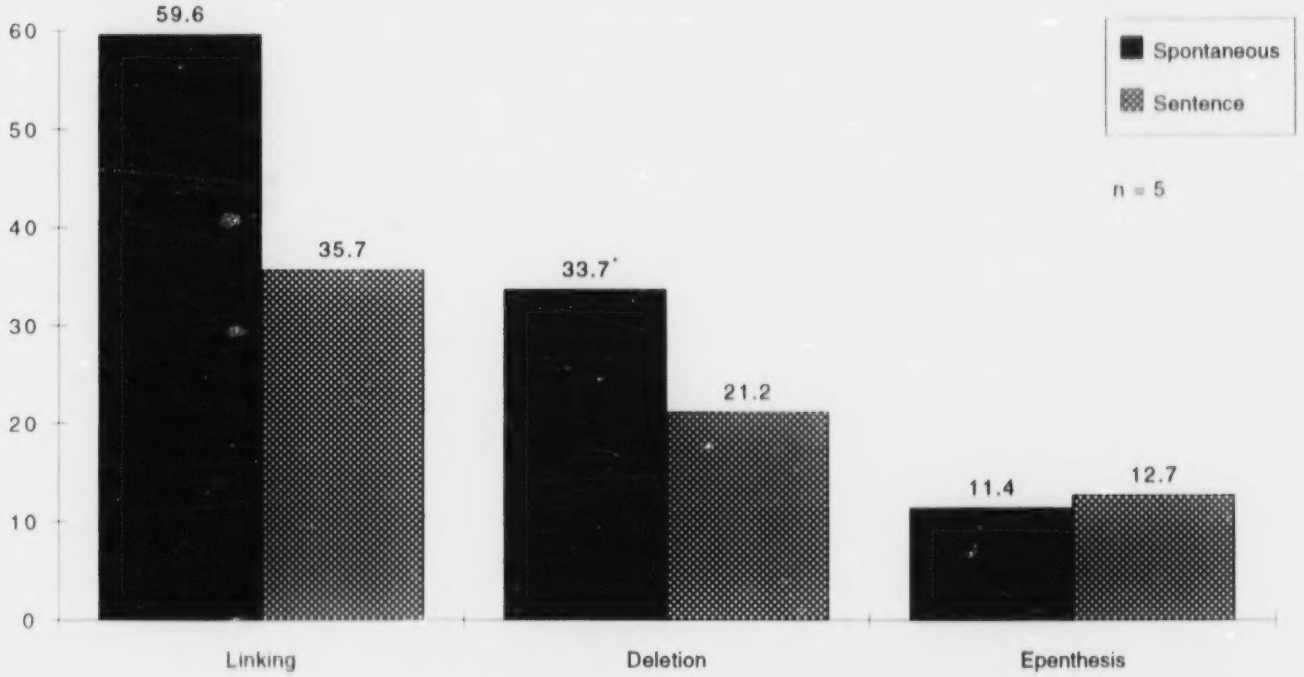


Figure 5. Group Mean Percentage Rates for IP Group for Linking, Deletion, and Epenthesis on Two Tasks.

IP Group. Figure 5 displays the linking, deletion, and epenthesis behavior among the IP group as they read sentences and spoke spontaneously. Although their linking and deletion rates were higher during the spontaneous task, only the linking rate was significantly higher according to the t-test ($t = 3.97$, $df = 4$, $p = 0.02$). The t-test was non-significant for the deletion and epenthesis categories.

The general finding of significantly higher linking and deletion rates when speech is more casual–the spontaneous production–than when speech is more formal–the reading aloud of sentences–corroborates the results of other research on second language style shifting (L. Dickerson, 1974; Schmidt, 1977; Beebe, 1980; Major, 1987). It is important to note once again that the prepared sentences contained a much higher concentration of consonant clusters than did the spontaneous speech samples. Had the spontaneous speech samples been equivalent to the prepared sentences in the number and types of clusters present, the consonant deletion rates for spontaneous speech would probably have been even higher. The rates for epenthesis, however, were not significantly different from one task to another for either group, indicating that epenthesis is not as sensitive to style shifting as linking and deletion are.

Also of interest in this study were the specific types of modifications that occurred in the spontaneous speech samples. In addition to the linking and consonant deletion during the spontaneous task, the NS group also used numerous instances of weak syllable deletion, a category of simplification not systematically investigated in this study. In some cases, syllable deletions were so drastic that the words would be unintelligible apart from their context. Examples of such radical modifications are in (27) and (28). The Japanese groups only rarely deleted syllables during the spontaneous task.

(27) [pɹɑm] for *problem*
(28) [ɪʊz] for *it was*

CONCLUSIONS

The purpose of this study was to compare the connected speech modifications of intermediate- and high-proficiency Japanese ESL learners and native speaker of American English, produced during two different speaking tasks and to assess the effects of language proficiency, native language transfer, and style shifting on those modifications.

The results clearly show that language proficiency is an important factor affecting speech modifications. The HP group displayed significantly more modifications in three of the categories investigated when compared with the IP group. Also, while the HP group approached the NS group in their rate of modifications in many of the categories investigated, the IP group, for the most part, showed dramatically lower rates of modification. Insofar as one can infer longitudinal development from a cross-sectional study such as this, it appears that as Japanese ESL learners achieve higher speaking proficiency, they modify speech more frequently in some of the same ways that native speakers do.

The study also shows that native language transfer affects connected speech modifications, although the theory is limited in its ability to predict exactly where and how

often certain forms will occur. Since the model of native language transfer is static, rather than dynamic, it cannot by itself accurately predict the development that occurs in second language acquisition.

Further, the results of this study show that style shifting is as important a factor in the connected speech modifications of Japanese ESL learners as it is in native English speech; a higher rate of simplification occurred during spontaneous speaking than during sentence reading for most of the categories investigated. However, it is important to note that Japanese learners did not exhibit the frequent radical restructuring of forms evident in the native speakers' spontaneous speech.

In conclusion, this study has confirmed that a combination of factors–style, native language, and language proficiency–influence the overall rate of modifications in the connected speech of Japanese learners of English. Future research in this area must take into account all of these factors. The direction of that future research should be to examine the aspects of connected speech not addressed in the macroanalysis approach adopted in this study, namely, the finer distinctions in connected speech modifications–types of forms in each category, their phonetic environment, and their position in the utterance.

ACKNOWLEDGMENTS

We are indebted to Randy Thrasher, Rob Homan, Yuji Nakamura, and Adrienne Nicosia for helping us to rate the speech samples for the study and to Jeff Nesheim for his help with the graphs. The first author is indebted to International Christian University in Tokyo for granting her a Research Fellowship during her sabbatical leave from Iowa State University, which made this research possible.

THE AUTHORS

Janet Anderson-Hsieh is an Associate Professor of English at Iowa State University. Her research interests include second language phonology, native speaker reactions to nonnative speech, and pronunciation pedagogy, in particular the teaching of suprasegmentals.

Timothy Riney is an Associate Professor in the Division of Languages at International Christian University in Tokyo. His research interests include second language phonology and sociolinguistics.

Kenneth Koehler is a Professor in the Department of Statistics at Iowa State University. His research interests include multivariate analysis and linear models.

REFERENCES

Anderson, J. I. (1983). Syllable simplification in the speech of second language learners. *The Interlanguage Studies Bulletin*, 3, 4-36.

Anderson, J. I. (1987). The markedness differential hypothesis and syllable structure difficulty. In G. Ioup & S. Weinberger (Eds.), *Interlanguage phonology: The acquisition of a second language sound system* (pp. 279-291). Cambridge, MA: Newbury House.

Anderson-Hsieh, J. (1990). Teaching suprasegmentals to International teaching assistants using field-specific materials. *English for Specific Purposes*, 9, 195-214.

Anderson-Hsieh, J. (1992). Using electronic visual feedback to teach suprasegmentals. *System*, 20, 1-13.

Avery, P. & Ehrlich, S. (1992). *Teaching American English pronunciation.* Oxford: Oxford University Press.

Beebe, L. (1980). Sociolinguistic variation and style shifting in second language acquisition. *Language Learning*, 30, 433-447.

Broselow, E. (1983). Non-obvious transfer: On predicting epenthesis errors. In S. Gass & L. Selinker (Eds.), *Language transfer in language learning* (pp. 269-280). Rowley, MA: Newbury House.

Broselow, E. (1984). An investigation of transfer in second language acquisition. *International Review of Applied Linguistics*, 22, 253-269.

Brown, G. (1977). *Listening to spoken English.* London: Longman.

Chan, M. (1987). *Phrase by phrase: Pronunciation and listening in American English.* Englewood-Cliffs: Prentice-Hall Regents.

Chomsky, N. & Halle, M. (1968). *The sound pattern of English.* New York: Harper & Row.

Dalby, J. (1986). *Phonetic structure of fast speech in American English.* Bloomington, IN: Indiana University Linguistics Club.

Dauer, R. (1993). *Accurate English: A complete course in pronunciation.* Englewood Cliffs, NJ: Regents/Prentice-Hall.

Dickerson, L. J. (1974). Internal and external patterning of phonological variability in the speech of Japanese learners of English: Toward a theory of second language acquisition. Doctoral dissertation, University of Illinois.

Dickerson, W. (1989). *Stress in the stream of speech: The rhythm of spoken English.* Urbana, IL: University of Illinois Press.

Eckmann, F. (1991). The structural conformity hypothesis and the acquisition of consonant clusters in the interlanguage of ESL learners. *Studies in Second Language Acquisition*, 13, 23-37.

Gilbert, J. (1984). *Clear speech: Pronunciation and listening comprehension in American English.* Cambridge: Cambridge University Press.

Gilbert, J. (1993). *Clear speech: Pronunciation and listening comprehension in North American English* (2nd ed.). New York: Cambridge University Press.

Grant, L. (1993). *Well said: Advanced English pronunciation.* Boston: Heinle & Heinle.

Greenberg, J. (1978). Some generalizations concerning initial and final clusters. In J. Greenberg (Ed.), *Universals of human language, II.* Palo Alto, CA: Stanford University Press.

Hatch, E. & Lazaraton, A. (1991). *The research manual: Design and statistics for applied linguistics.* New York: Newbury House.

Hieke, A. (1987). Absorption and fluency in native and non-native casual speech in English. In A. James & J. Leather (Eds.), *Sound patterns in second language acquisition* (pp. 41-58). Dordrecht: Foris Publications.

Labov, W. (1972). *Sociolinguistic patterns.* Philadelphia: University of Pennsylvania Press.

Lane, L. (1993). *Focus on pronunciation: Principles and practice for effective communication.* New York: Longman.

Lass, R. (1984). *Phonology.* Cambridge: Cambridge University Press.

Major, R. (1987). A model for interlanguage phonology. In G. Ioup & S. Weinberger (Eds.), *Interlanguage phonology: The acquisition of a second language sound system* (pp. 101-124). Cambridge, MA: Newbury House.

Oller, D. K. (1974). Simplification as the goal of phonological processes in child speech. *Language Learning,* 24, 299-303.

Pennington, M. & Richards, J. (1986). Pronunciation revisited. *TESOL Quarterly,* 20, 207-225.

Prator, C. & Robinett, B. (1985). *Manual of American English pronunciation, Fourth Edition.* New York: Holt, Rinehart & Winston.

Riney, T. (1990). Age and open syllable preference in interlanguage phonology. *Proceedings of the Tenth Second Language Research Forum,* University of Oregon, March 1-4, 1990.

Sato, C. (1984). Phonological processes in second language acquisition: Another look at interlanguage syllable structure. *Language Learning,* 34, 43-57.

Saunders, W. (1987). Morphophonemic variation in clusters in Japanese English. *Language Learning,* 37, 247-272.

Schmidt, R. (1977). Sociolinguistic variation and language transfer in phonology. *Working Papers in Bilingualism,* 12, 79-95.

Tarone, E. (1980). Some influences on the syllable structure of interlanguage phonology. *International Review of Applied Linguistics,* 18, 139-152.

Temperley, M. S. (1987). Linking and deletion in final consonant clusters. In J. Morley (Ed.), *Current perspectives on pronunciation* (pp. 63-82). Washington, D.C.: Teachers of English to Speakers of Other Languages.

Thompson, I. (1987). Japanese speakers. In M. Swan & B. Smith (Eds.), *Learner English: A teacher's guide to interference and other problems* (pp. 212-223). Cambridge: Cambridge University Press.

Trammel, R. (1992). English ambisyllabic consonants and half-closed syllables in language teaching. *Language Learning,* 43, 195-238.

Vance, T. J. (1987). *An introduction to Japanese phonology.* Albany: State University of New York Press.

Wong, R. (1987). *Teaching pronunciation: Focus on English rhythm and intonation.* Englewood Cliffs, NJ: Prentice Hall Regents.

APPENDIX

Sentence Reading Test*

1. A large group of students graduates each spring.
2. I heard that splendid speech you made last night.
3. He changed his mind and lunched at the student cafeteria.
4. They answered correctly, and the instructor thanked them.
5. I request that all books be removed from the desks.
6. He will need all his strength to catch the others.
7. The next time you come we must speak Swahili.
8. Someone's trying to turn my friends against me.
9. Does she like this part of the United States?
10. George nudged me and asked if we hadn't watched long enough.
11. I wonder why that child acts so strangely.
12. The baby has a big splinter in the skin of his finger.
13. Thanksgiving comes the last Thursday in November.
14. Do you expect to catch the next train?
15. We'll have to risk using the old screens this year.

*Sentences from *Manual of American English Pronunciation, Fourth Edition* by Clifford M. Prator and Betty W. Robinett, pp. 187-188. Copyright © 1985 by Holt, Rinehart & Winston. Reprinted with permission of the publisher.

IDEAL 7, 1994

DISCOURSE STRESS AND PHRASAL VERBS

Wayne B. Dickerson

The proper placement of discourse stress is the result of an intricate orchestration of stress rules at the word, construction, and discourse levels. This paper focuses on the interaction of the top two levels–construction and discourse–both of which are necessary but neither of which is sufficient by itself to position stress meaningfully in sentences. The construction at issue is the phrasal verb, also called the two- and three-word verb and the multiword verb. This common and highly productive structure, while grammatically complex, is the picture of simplicity where stress is concerned. Its pronunciation patterns are easy enough to understand and apply that even low-level adult ESL/EFL learners can use them–in concert with discourse patterns–to improve the accuracy and intelligibility of their speech.

INTRODUCTION

Discourse stress is a signpost in English sentences telling the listener what to pay attention to. When the stress is well placed, it alerts the listener to the portion of the sentence the speaker considers particularly relevant at the moment. When it is misplaced, the stress misdirects the listener's attention and may affect the listener's interpretation or comprehension of the utterance. For example, referring to the weather and a past picnic, the speaker who said, "I THOUGHT it would rain," meant not only that the thought occurred, but also that it **did** rain. Had the speaker said, "I thought it would RAIN," it would have meant not only that the speaker had the thought, but also that it did **not** rain. Well-placed stress in discourse does more than make sentences sound nativelike; it is a critical substratum of the speaker's message. It says to the listener, 'I want you to focus here.'

ESL/EFL learners frequently mislead their listeners and threaten intelligibility by their misuse of stress in sentences that contain phrasal verbs. As intractable as this problem may seem, it need not persist. This paper identifies not only the nature of the problem but also the simple generalizations that can help ESL/EFL learners produce more accurate speech and thereby send more accurate signals.

THE NATURE OF THE PROBLEM

The misstress of phrasal verbs is serious not only because of the high proportion of stress mistakes, but also because phrasal verbs are so common in English that recurrent errors affect many sentences in discourse. Interestingly, ultimate responsibility for such poor student performance appears to lie with ESL/EFL professionals–textbook writers and teachers–not their students.

Learners' stress errors in sentences with phrasal verbs are of three kinds. First, discourse stress is on a verb head when it should occur on a particle: *I planned to TURN it down. Second, stress lands on a particle when it should be on the verb head: *I warned them ABOUT it. Third, discourse stress appears on the verb–head or particle–when it should be on the object or elsewhere in the sentence: *I planned to TURN down the proposal, so I warned my friends ABOUT it.

An informal survey of students in an advanced pronunciation class suggests the extent of such problems. A diagnostic test given to sixty-five international graduate students at the University of Illinois (Urbana) at the beginning of the 1992 fall semester contained eight instances of two- and three-word verbs: *to come along, look at, turn down, conjure up, concentrate on, drop off, keep up with, find out about*. Half of the students had an error rate of 80% or greater. The rate was 60% or greater in three-quarters of the cases. In the remaining quarter of the group, the error rate ranged from 20% to 46%. Overall, students successfully placed discourse stress in these sentences an average of only 37% of the time.

International graduate students are not unique in this respect. Christopher Gutknecht (1992:263), while noting that his German students generally have few problems with English stress and intonation, also says, "The only place where difficulties might arise is in the production of phrasal verbs or verbs with post-placed prepositions, where the learner has to know which component–that is the verb head or the particle–receives the nucleus [i.e., discourse stress]."

If phrasal verbs were uncommon in English, these stress errors would not be worth commenting on. But the high frequency of multiword verbs in ordinary speech makes stress accuracy crucial. Celse-Murcia & Freeman (1983:265) observe that phrasal verbs "are such an important part of colloquial English that no one can speak or understand conversational or informal English with a knowledge of phrasal verbs." Contributing to their frequency is the fact that English speakers are coining new ones all the time. Bowen (1975:256) notes that "[t]he use of phrasal verbs is perhaps the most productive pattern of lexical creativeness in modern English. New combinations are constantly being added to the lexicon." There are so many, in fact, that a dictionary of phrasal verbs alone is an impressive volume; Courtney's *Longman Dictionary of Phrasal Verbs* (1985) runs 734 pages and has over 12,000 entries, most with multiple meanings.[1]

Why don't students do better with phrasal verbs? A large part of the problem is that while students learn the grammar of phrasal verbs, their materials do not teach the associated stress patterns. A survey of the first forty grammar texts in the ESL library catalogue at the University of Illinois revealed that the topic of phrasal verbs occurs in every one of them. Yet none of the authors offers a word of help with the stress pattern of these verbs. Even books devoted entirely to phrasal verbs (e.g. Burke 1991, Heaton 1965, Hook 1981, Svenconis 1982) have little if anything to say about the stress of phrasal verbs in discourse context. So where can students find stress-pattern information? A likely place is in pronunciation texts. Yet an examination of all the pronunciation texts in the University of Illinois ESL library (twenty-four in all) showed that only eight discuss phrasal verbs at all, while the remaining sixteen have nothing to say on the topic. None mentions three-word verbs. The assumption of most authors appears to be that the stress of phrasal verbs, like the stress of polysyllabic

words, is part of what the student must memorize along with the word. Most discouraging is that the others, for all their good intentions, do not describe the stress of phrasal verbs accurately enough to help students speak correctly.

The situation is clear: Students regularly receive detailed structural information on phrasal verbs because they are so much a part of everyday English no speaker can escape them. But ESL/EFL instruction virtually ignores their pronunciation in discourse with the result that attention-distracting stress mistakes blemish students' oral use of phrasal verbs.

DISCOURSE STRESS

The Basic Pattern

In recent years ESL/EFL teachers have come to understand the function of discourse stress largely because of their interest in the communicative uses of language. Although there is much yet to learn, the broad outlines of the stress system are becoming clear. A brief review of its central features will help to frame the issue of phrasal verbs in discourse more precisely. The following dialogue from Dickerson (1989, unit 2, p. 16) will serve as an illustration. Here, one teacher is discussing a student with another teacher and asks:

A.	How are Jean's GRADES, by the way?	A.	How are Jean's grades, by the way?
B.	In my class, she gets GOOD grades. I mean REALLY good grades.	B.	In my class, she gets good grades. I mean really good grades.
A.	Does she have many FRIENDS?	A.	Does she have many friends?
B.	A FEW friends–a few CLOSE friends.	B.	A few friends–a few close friends.

An important function of discourse stress is to highlight new information introduced into a conversation. The dialogue above is repeated to the right with new information underlined. By convention, we usually put the discourse stress on the last content word in the string of new information (not on the last word or the last content word in a sentence). Content words are the main nouns, adjectives, verbs, and adverbs as distinct from function words, such as prepositions, articles, pronouns, auxiliary verbs, and conjunctions. Therefore, in teacher A's first utterance, discourse stress attaches to *grades*. *By the way* is a parenthetical comment that carries no prominent stress. So in teacher B's first phrase, *grades* is old. The last content word in what is new receives the stress, namely, *good*. In B's second phrase, *good* and *grades* are now old; the string of new material ends in the intensifier, *really*, which discourse stress marks. A's next turn advances the conversation with something new, ending in the content word *friends*, which A stresses. In B's last line, containing two phrases, *friends* is old, having been introduced by A's previous question. So in answer, B stresses *few* as the last content word in the string of new information. Therefore, by the time B comes to the last phrase, *few* and *friends* are common currency, and discourse stress falls on *close*, as the only thing new in that phrase. As this dialogue illustrates, discourse stress plays an important role in sentences; it directs the listener to what the speaker considers new additions to the semantic substance of the message. A fuller exposition of the discourse stress system can be found in Dickerson (1989).

As noted, the basic generalization that captures the behavior of discourse stress in the dialogue above is that **discourse stress falls on the last content word in the string of new information.** At issue in this paper is the question: Does this generalization apply equally to sentences with phrasal verbs? The answer depends on where the phrasal verb is located.

If the phrasal verb is not at the end of the string of new information, no problems arise. On the assumption that the following examples contain new information in all but their pronouns, discourse stress falls accurately on the last content word in utterances with two-word verbs (first set) and three-word verbs (second set).

She couldn't stop *talking about* the wédding.
I *complimented* her *on* her achiévement.
The police *accused* him *of* the críme.
I'm sorry they *watered down* the repórt.
We couldn't *make out* his sígnature.
She soon *got over* her féar.

I'm tired of trying to *get along with* such a groúch.
He was *called away on* urgent búsiness.
Then we *went back to* our cábin.
Let's *team* him *up with* Álice.
Bill *apologized to* the chairman *for* his cómments.
We've got to *get down to* búsiness.

If the phrasal verb ends the new information, stress properly falls on the verb. The discourse stress rule, however, cannot place the stress on the verb because the rule does not know what to do when the new-information verb is in more than one word, as in the next examples. The rule fails in part because phrasal verbs are not single content words. They are multiword strings that function as a unit; they are **constructions** like compound nouns, compound adjectives, etc.

She wouldn't stop *talking about* it.
I'm sorry they *watered* it *down*.
I'm tired of trying to *get along with* him.
Let's *team* him *up with* her.

Therefore, an important repair of the stress rule would be to acknowledge constructions: **Discourse stress falls on the last content word or construction in the string of new information.** This accommodation is helpful not only for phrasal verbs but also for strings of new information that end in constructions of any kind.

Implied in the revised rule is the understanding that discourse stress will fall on the last content word or construction **according the stress pattern of the word or construction.** That is, discourse stress on a last content word attaches to the syllable of the word ordinarily stressed when the word is in isolation. For example, if the word *compartment* were the last content word, discourse stress would be on the second syllable because that is the stress position of the word when spoken out of context. Similarly, when the discourse stress rule

assigns stress to the last construction, it comes to rest on the part of the construction commonly stressed when the construction is spoken alone.

Two levels of stress are obviously involved. The discourse stress rule, as modified above, is adequate for the discourse level. But to use it where phrasal verbs or any other constructions are concerned, discourse stress must follow the stress rules of the construction level. So, what are the rules governing the stress of phrasal verbs?

THE STRESS OF PHRASAL VERBS

Two Central Issues

In the sentences below, where the final phrasal verbs are new information, the discourse stress rule must place stress on each verb construction, as indeed it does. The obvious problem is that the position of stress is not always the same from verb to verb. In the first three cases, stress is on the verb head, while in the second three, stress is on the first or only particle. Part of the construction stress rule for phrasal verbs must address cases like these in which the components of a final phrasal verb are adjacent in the new information. (Since pronouns refer back to past referents, they are not new information.)

What are they *árguing about?*
I wish I could *depénd on* him.
They *híd* it *from* him.
He's going to *get awáy with* it.
How many did you *send óut?*
She never *put* it *ón.*

Another problem surfaces when the parts of a phrasal verb are separated by other sentence components, as in the following utterances. In each, only a portion of the phrasal verb–the particle(s)–ends the new-information string. Yet discourse stress falls neither on the final part of the verb nor on the verb at all. So another part of the construction stress rule must clarify cases in which the phrasal verb has become fragmented and other new-information content words follow the verb head.

We *convinced* the commíttee *of* it.
He *talked* pássionately *about* them.
She *took* the télephone *apart!*
He *took* his ráge *out on* her.

To place discourse stress accurately in the ten examples above, the discourse stress rule must rely on a construction stress rule that adequately describes the stress of final phrasal verbs having adjacent and non-adjacent components in the new-information string. The following two sections examine these two cases.

Head or Particle?

Grammarians have categorized phrasal verbs in a multitude of ways. Some of their distinctions define a two-word verb. For example, a few researchers consider as two-word verbs only those that carry idiomatic meaning. Verb + particle combinations that carry literal meaning are not two-word verbs. Others treat verb head + adverb as the true two-word verb; verb head + preposition is not. Other distinctions dichotomize structural behavior–transitive

vs. intransitive, separable vs. inseparable, verbs taking a nominal complement vs. those taking a verbal complement, etc. The Longman dictionary referred to above puts phrasal verbs into fourteen structural classes. While these distinctions and categories may be technically useful, they do not matter for pronunciation purposes; all phrasal verbs fit the same basic stress rule.[2]

The rule, however, is not the one in cited in the few pronunciation texts that mention phrasal verbs. For instance, the statement, "[t]wo-word verbs are stressed on the second word: go awAY, get UP" (Hagen & Grogan, 1992:206), is oversimplified and misleading. A couple of texts go a bit further by saying that "[t]here are some frequently used, separable verb-preposition combinations in which the stress is on the first element: call for, listen to, laugh at, think about" (Handschuh and de Geigel, 1985:12-13). None of these descriptions does justice to the facts of two- and three-word verbs. Pronunciation rules must do better than this if they are to be helpful to learners.

While grammar books may slice the verb-construction pie in a host of ways, it is useful for stress purposes to think of just three types of phrasal verbs–two kinds of two-word verbs and one kind of three-word verb.

Verb Head	+Stress Particle
figure	out
drop	off
take	over
look	back

Verb Head	-Stress Particle
look	at
talk	about
dispense	with
approve	of

Verb Head	+Stress Particle	-Stress Particle
run	away	with
walk	out	on
talk	down	to
get	ahead	of

In the left-hand column are two-word verbs that in isolation have stress on the particle. They have what we call **stressable** particles (+ stress). (The term "particle" avoids the irrelevant distinction between adverbs and prepositions.) In the middle column are words often stressed on the verb head. They have **stressless** particles (- stress). In the last column are three-word verbs. They combine the two types of two-word verbs. The first particle is always stressable; the second particle is nearly always stressless.

Since stressless and stressable particles are virtually non-overlapping sets, the type of particle that follows the verb head is an excellent guide to the stress behavior of two- and three-word verbs. To distinguish a stressless particle from a stressable particle, all that is necessary is to recognize the small set of stressless particles. All the rest are stressable. Stressless particles are a set of eight: *about, at, for, from, of, on, to, with.*[3]

One of these eight–*on*–is a stressless particle only when the two-word verb falls into certain semantic domains. If the meaning of the verb has to do with cognitive or communication activities, then *on* is a stressless particle. Verbs like *to agree on, insist on, settle on, plan on, decide on, concentrate on, rely on, depend on, count on, bank on, call on, lecture on, talk on, speak on, tell on, preach on, comment on, touch on, enlarge on, tell on, dwell on, compliment on,* etc., have a stressless particle. If the verb has another meaning, such as *to put on, turn on*, then the particle is stressable.

In the examples below, the assumption is that the final phrasal verbs are new information and should receive the discourse stress. In the first set are two-word verbs with stressless particles; discourse stress attaches to the verb head.

about	What's she *complaíning about*?
about	I nearly *forgót about* it.
at	I don't like being *láughed at*.
at	We were all *annóyed at* him.
for	Who did you *vóte for*?
for	How much did he *páy* you *for* it?
from	Where does he *cóme from*?
from	Who were you *protécting* him *from*.
of	That's what I was *thínking of*.
of	Don't let him *convínce* you *of* it.
on	Politics is something they could never *agrée on*.
on	Please try to *cóncentrate on* it.
to	Who should I *apólogize to*?
to	Please *réad* it *to* me.
with	Here are some of the people I *wórk with*.
with	How could you *trúst* him *with* it?

Next are examples of two-word verbs with stressable particles. In each case, discourse stress is on the particle. There are many more stressable particles than stressless ones.

around	They were just *standing aróund*.
away	The couple wanted to *run awáy*.
back	When you will *come báck*?
behind	We *left* them *behínd*.
by	Don't let this chance *slip bý*.
up	Will he ever *give úp*?
down	The fever really *got* him *dówn*.
forward	The car *lurched fórward*.
off	Negotiations had *broken óff*.
out	Before we knew it, he had *passed óut*.
in	When did you *move ín?*
over	We tried to *talk* it *óver*.

Finally, three-word verbs behave like two-word verbs, having discourse stress on the first of the two particles.

around	I just never *got aróund to* it.
away	They couldn't *get* it *awáy from* him.
back	What do you think, now that you *look báck on* it?
forward	I'm really *looking fórward to* it.
off	How much money did he *make óff with*?
on	Well, let's *get ón with* it.
up	That's something I need to *brush úp on*.

The following dialogue from Dickerson (1989, unit 3, p. 97) provides an opportunity to see how phrasal verbs behave in discourse. The focus is on verbs at the end of strings of new information. Instances of such verbs are in brackets to the right of each line; each is marked appropriately. It is instructive to note how the two types of particles govern discourse stress. In the following, the pipe sign (|) separates unmarked phrases within a sentence, and an asterisk (*) designates a compound noun.

A clothing clerk talks with a customer.

A.	Hello. What can I do for you?	[dó for]
B.	I was looking for some summer slacks.	
A.	Please feel free to browse around.	[browse aroúnd]
B.	Do you do alterations?	
A.	Yes we do. If it's too large, we can take it in.	[take ín]
	If it's too long, we can cut it off | and hem it up.	[cut óff, hem úp]

- - - - - Customer finds some slacks - - - - -

B.	Here's what I was looking for.	[lóoking for]
A.	Would you like to try them on?	[try ón]
B.	Yes, I would.	
A.	The *dressing room is free.	
	If I can help, please ask for me.	[ásk for]

- - - Customer returns in a few minutes - - -

A.	How do they fit?	
B.	I don't think I care for them.	[cáre for]
A.	Perhaps a different pair?	
B.	No. I don't think I feel up to it.	[feel úp to]
A.	That's all right. Thank you for coming in.	[coming ín]
	Please hurry back.	[hurry báck]

One part of the phrasal verb stress pattern is now clear, namely, the importance of the particle when verb construction components are contiguous at the end of a new-information string. Fortunately, the distinction between stressless and stressable particles is simple and its application straightforward.

Verb or Content Word?

Another part of the stress pattern concerns cases in which a content word of some kind comes between the verb head and its particle. Even though the particle belongs to the verb and is the last piece in the string of new information, the particle does not receive discourse stress if the preceding content word (or construction) is also new information. It does not matter whether the particle is stressless or stressable; it behaves like any other function word in not attracting discourse stress. Instead, the last new content word wins the stress. In the

following examples, stressless particles are in the left column; stressable particles are in the right.

We *tricked* Náncy *with* it.	They can *work* the détails *out*.
He *looked* inténtly *at* her.	Then she *tried* a cóat *on*.
Please *thank* Ánne *for* me.	We couldn't *talk* Bíll *into* it.
He *told* the políce *about* her.	Will he *let* his fámily *in on* it?

The second part of the rule for phrasal verbs is now clear, also. When the verb head and its particle are separated by a new-information content word or construction, stress placement conforms to the discourse stress rule, namely, stress falls on the last content word or construction, disregarding the particle.

DISCOURSE STRESS AND NEW INFORMATION

The only reason a construction stress rule comes into play when assigning discourse stress is that the construction is part of the new information in the phrase. If a phrasal verb is new information, then the phrasal-verb stress rule can help position discourse stress properly. The preceding discussion has argued for a rule with two parts.

First, when a new-information content word or construction follows the verb head, the final particle has the status of a function word, allowing stress to fall on the last new-information content word or construction. Second, when no new-information content words or constructions follow the verb head, construction stress depends on the distinction between stressless and stressable particles. These two points make it possible to assign discourse stress to any sentence with a phrasal verb according to the stress pattern of the verb construction.

The following dialogue based on Dickerson (1989, unit 3, p. 98) illustrates the stress behavior of phrasal verbs, particularly the observation that particles separated from the verb head by content words or constructions have no special status. In this example, the pipe symbol (|) marks off phrases within sentences; the asterisk (*) identifies compound nouns; **NI** is a stressed new-information content word or construction; and **ni** and **oi** are unstressed content words or constructions, new and old, respectively.

A pair of mechanics help a customer change a tire on a new car.

A.	The procedure is simple | if you think about the steps.	[think about NI]
B.	First, put the *emergency brake on.	[put NI on]
	Then open up the trunk |	[open up NI]
	and take the spare tire out.	[take NI out]
A.	You'll see the jack and *lug wrench fastened to the wheel.	[fastened to NI]
B.	Next, loosen the *wheel lugs | before jacking the *car body up.	[jack NI up]
A.	Now, raise the tire off the ground, and finish unscrewing the lugs.	[raise oi off NI]
B.	Next, take the wheel off of the axle, and	[take oi off of NI]
	put on the new one. But just handtighten the lugs.	[put on NI]

A. Finally, lower the car, and use the wrench to really tighten down on the bolts.	[tighten down on NI]
B. Now, you can wrap your tools up | and put them away.	[wrap NI up] [put awáy]

DISCOURSE STRESS AND OLD INFORMATION

The foregoing discussion has emphasized the importance of new information. Sometimes, however, final phrasal verbs or the content words and constructions after the verb head are not new information. In the first dialogue above, new information becomes old when it is repeated verbatim (bolded): How are Jean's GRADES? She gets GOOD **grades**, REALLY **good grades**. But often enough, speakers avoid exact repetitions, preferring instead a synonym for the old content or a paraphrase of it. When this happens, discourse stress still eschews the old information and looks for new information elsewhere.

The next dialogue illustrates the use of synonyms for verbs originally introduced as new information, namely, *accompany* and *escape*. The synonyms in this example are phrasal verbs. Nevertheless, as old information, they are ineligible for discourse stress which falls somewhere else in the sentence. (The assignment of discourse stress to some of these sentences goes beyond the basic generalizations of this paper and will not be discussed here.)

Police question a relative of an jail escapee.

A. We're here about your brother. We want to know who accompanied him | when he escaped. Was it Sarah?	
B. She míght have *gone with* him.	[synonym of *accompany*]
Why not ásk her if she *tagged along?*	[synonym of *accompany*]
A. Did you hélp him *get away?*	[synonym of *escape*]
B. I wasn't even in tówn when he *took off.*	[synonym of *escape*]

An example of paraphrased old information is in the following dialogue where the event of running out of gas is referred to in a variety of ways (Dickerson 1989, unit 3, p. 98). The paraphrases–*that day, such a situation, the problem, an adventure like this, the experience*–are content words that follow the verb head of phrasal verbs.[4] Even so, they are not candidates for discourse stress because, while the words are new, they refer to old information. By contrast, the phrasal verbs are new information and, being the last content words in those new-information strings, they capture discourse stress. Again the pipe sign (|) separates unmarked phrases; the asterisk (*) identifies compound nouns; **NI** is a stressed new-information content word or construction; and the abbreviation **oi** stands for an old-information content word or construction that is unstressed.

An unhappy parent talks with the camp bus driver.

A. I heard you ran out of gas | on the way to camp last week.	[ran out of NI]
B. Don't remind me of that day!	[remínd of oi]

A.	Apparently you weren't prepared for such a situation.	[prepáred for oi]
B.	Not really. But it certainly livened up our afternoon.	[livened up NI]
A.	So who did people blame for the problem?	[bláme for oi]
B.	The parents blamed me, of course. But the kids were hoping for an adventure like this. They talked about the experience | for the rest of the trip.	[hóping for oi] [tálked about oi]
A.	Are you sure you're cut out for *bus driving?	[cut oút for oi]
B.	At least I can put up with it.	[put úp with]

These dialogues illustrate the intimate interaction of discourse stress and construction stress. Clearly the construction stress pattern of phrasal verbs does not carry the day. If it did, all of the verbal synonyms and all of the paraphrases after the verb heads would sport discourse stress. The discourse-level determination of new and old information, discovered only from context, is the essential first step to the placement of discourse stress. Yet the discourse stress rule is helpless to position stress correctly without construction stress information. Both levels of stress are interdependent and equally responsible for correct stress placement.

THE FORMAL RULES

Stated formally, the following rules capture the essence and interaction of the two levels of stress assignment. The examples use two- and three-word verbs, stressless and stressable particles, content words and constructions, and new and old information in various positions in an effort to show the diversity of circumstances these rules control.

Discourse stress:

Discourse stress falls on the last content word or construction in the string of new information.[5]

Construction stress of phrasal verbs:

1. When a new-information content word or construction follows the verb head, apply discourse stress.

2. When no new-information content word or construction follows the verb head, place stress on a stressable particle; otherwise place stress on the verb head.

Examples

[This dialogue between a husband and wife repeats old information in synonyms for *disapproving* (*object to*) and *eating at* (*get* me *down*) and in verbatim repetition (*viewpoint*). Lines are numbered for reference.]

A.	I can't *put up with* your sílence.	1
	You *picked up* the néwspaper | and	2
	looked disappróvingly *at* it.	3
	What's *éating at* you?	4
B.	Oh, Al's editórials *get* me *down*.	5
A.	What about them?	
B.	It's his viéwpoint I *object to*.	6
A.	But he's *entítled to* a viewpoint.	7
B.	I know. But...	

The two rules encompass so many possible situations in discourse that it may be helpful as a summary to highlight what the rules do in the example dialogue. First, the discourse

stress rule does not position stress in a phrase without taking into account the stress conventions of the content words and constructions involved. Second, when a phrasal verb is part of the new information, the stress-assignment process engages the rule governing phrasal-verb stress. Here is what the rule does.

Case 1 of the phrasal-verb stress rule applies to a new-information content word [1] or construction [2] *anywhere* after the verb head. If it is immediately after the verb head [3], the following particle is treated as a function word. But it may follow the entire verb [1,2]. In both situations, stress goes on the last new-information content word or construction. Case 2 accounts for instances in which neither a content word nor a construction occurs after the verb head [4] and for instances in which a content word or a construction occurs after the verb head but is not new information [7]. In both situations, the rule user must be able to distinguish stressless from stressable particles. By noting the stress of stressable particles, case 2 simultaneously accounts for two- and three-word verbs with stressable particles; the otherwise case accommodates verbs with stressless particles.

Finally, when the phrasal verb is not part of the new information at all [5,6], the verb construction rule does not figure in stress assignment. The discourse stress rule places stress on the last new-information content word [5] or construction [6] according to their stress patterns.

CONCLUSION

The stress of sentences with phrasal verbs is highly regular and basically simple. Since the rules were designed for anyone who can distinguish content words from function words, learners need no longer memorize or guess at the stress of the phrasal verbs they encounter; they can predict that stress and do so with striking accuracy. An indication of this is the performance of those sixty-five University of Illinois students mentioned above. By the end of their pronunciation course, the same students whose pretest success rate at the beginning averaged only 37% had an average posttest success rate of 84%.

Improvement such this should encourage writers of grammar and pronunciation materials to break with their long tradition and fill the void in their texts with guidance about the stress system of phrasal verbs. Only then will their students' oral performance convey the discourse signals that listeners expect and need in order to process speech successfully.

THE AUTHOR

Wayne Dickerson, professor of English as an International Language and professor of Linguistics, University of Illinois (Urbana), is an applied phonologist specializing in pedagogical applications of generative phonology, English orthography, stress and intonation, and the development of ESL pronunciation materials. He is the author of the ESL text, *Stress in the Speech Stream, The Rhythm of Spoken English*, and is chief editor of the journal, *Issues and Developments in English and Applied Linguistics (IDEAL)*.

NOTES

[1]This is not the only collection of phrasal verbs, though one of the most ample. See also Heaton (1965) and Svenconis (1982) each with more than 3000 entries.

[2]One of the first principles of pedagogical rule writing is to observe the No-Prior-Knowledge Assumption (Dickerson 1985), namely, the assumption that the learner does not already know the language and does not have native-speaker resources. Any violation of this assumption imposes an unfair burden on learners and guarantees their flawed performance. Unless learners can be trained to make accurate judgements as to whether the meaning of a verb is literal or idiomatic, or whether a particle is an adverb or a preposition, or whether a phrasal verb can take an object after the particle or not, these prerequisites for rule use qualify as violations.

[3]This group of eight does not correspond precisely with what are often categorized as prepositions. Some British authors suggest that among the prepositions are also *after, into, off, over, through, without.* But in all sentences I have examined where these words are in final, new-information phrasal verbs, stress is on the particle, not the verb head, e.g. It's silly to run áfter them. Is this what I should go óver? Why do withoút it?

[4]Illustrated in the next-to-the-last line of the dialogue–in the construction *bus driving*–is a paraphrase not of a particular word but of a shared understanding, namely, that the parties are talking about speaker A's recent bus driving.

[5]This paper has focused on only one important function of discourse stress, namely, to highlight new information. Another of its functions is to highlight explicit contrasts for the listener. In this role, the phrasal verb rules play no part. In fact, contrasts may even violate construction stress rules. For example, *I was talking abóut him, not talking tó him.* Or, *He said he'd rather wálk out of prison than bréak out.*

REFERENCES

Bowen, J. D. 1975. *Patterns of English Pronunciation.* Rowley, MA: Newbury House.

Burke, H. R. 1992. *The Fickle Ones.* Ottawa: Point-to-Point.

Celce-Murcia, M. & Larsen-Freeman, D. 1983. *The Grammar Book.* Rowley, MA: Newbury House.

Courtney, R. 1983. *Longman Dictionary of Phrasal Verbs.* London: Longman

Dickerson, W. B. 1985. A spelling approach to word-final voicing. *English Teaching Forum* 23:29-33.

Dickerson, W. B. 1989. *Stress in the Speech Stream: The Rhythm of Spoken English, Student Text.* Urbana: University of Illinois Press.

Gutknecht, C. 1992. Intonation and language learning: The necessity for an integrative approach. In Brown, A. (Ed.), *Teaching English Pronunciation, A Book of Readings.* 1991. London: Routledge, 259-269.

Hagen S.A. & Grogan, P. E. 1992. *Sound Advantage, A Pronunciation Book.* Englewood Cliffs, NJ: Prentice Hall Regents.

Handschuh, J. & de Geigel, A. S. 1985. *Improving Oral Communication.* Englewood Cliffs, NJ: Prentice Hall.

Heaton, J. B. 1965. *Prepositions and Adverbial Particles.* London: Longman.

Hook, J. N. 1981. *Two-Word Verbs in English.* New York: Harcourt Brace Jovanovich.

Svenconis, D.J. 1982. *The Handbook of English Verbal Phrases.* Framingham, MA: English Studies Publishing.

IDEAL 7, 1994

THE STRESS OF COMPOUND NOUNS:

LINGUISTIC CONSIDERATIONS AND PEDAGOGICAL IMPLICATIONS

Laura D. Hahn

The stress of compound nouns contributes a unique prosodic pattern to the rhythm of English. This pattern functions systematically in terms such as *flówer pòt* and *gráveyàrd*. However, the boundaries delineating compound nouns are far from clear. Furthermore, the stress pattern is not applied with obvious regularity; for example, we find *a lúnch bòx* but *a bòx lúnch*. This paper will investigate some of the difficulties involved in defining and stressing compound nouns, and discuss implications for ESL pronunciation teaching.

BACKGROUND

It is now widely recognized that prosodic features contribute significantly to the meaning of an English utterance (Avery & Ehrlich, 1992; Morley, 1991; Pennington & Richards, 1986; Brazil, Coulthard & Johns, 1980; Stevens, 1989, among others). Because proper stress, rhythm, and melody directly affect intelligibility, they are often the target of instruction and practice in ESL pronunciation courses.

However, many aspects of the English prosodic system are so complex, so inadequately defined, and/or so ineffectively adapted for classroom materials that instructors are often hard pressed to present satisfactory lessons on them. This is undoubtedly the case with compound constructions. As Taylor (1991, p. 67) states, "It is notoriously difficult to know how to stress English compound words."

Roughly speaking, compound constructions are combinations of two or more words which work together to form a single unit of meaning. They can function as:

nouns: *culture shock, driving test, social life*
adjectives: *good-looking, heartfelt*
verbs: *to footnote, to ice skate*
adverbs: *upstairs, inside out*

An investigation of compound nouns alone reveals the broad scope of issues related to defining and teaching compound constructions.

Compound nouns can be described on three levels: syntactic, semantic, and phonological; on each level, they are often compared to noun phrases. On the syntactic level, the elements of a noun phrase constitute separate syntactic elements, while the elements of compound nouns make up one single syntactic element:

Noun Phrase (adj. + noun)	Compound Noun (one noun)
soft powder	*curry powder*
a different dress	*a party dress*
social interaction	*social life*
cold beer	*cold cream*

Compound nouns can also be analyzed in terms of the parts of speech of the component elements. The most common combination by far is Noun + Noun, though many others exist. Following are some examples:

Noun + Noun: *area code, folksong*
Noun's Noun: *Adam's apple, bull's eye*
Adjective + Noun: *middle man, cold front*
Noun + Verb or Verb form: *jaywalking, stargazing, sunrise, nightfall*[1]
Verb + Noun: *grindstone, pickpocket*
Verb + Preposition: *a rip-off, a hangover*

Stageberg provides two criteria which distinguish compound nouns from similar grammatical constructions. First, compound nouns "cannot be divided by the insertion of intervening material," (1971, p. 109). For example, *soft white powder* is a possible grammatical utterance; therefore *soft powder* is not a compound noun. But *curry red powder* is not grammatical, so *curry powder* is a compound noun. The second criterion is that one element of a compound noun "cannot participate in a grammatical construction," (p. 110). For example, in, "I need a completely different dress," *different* can participate with *completely*. However, in, "I need a completely party dress," *party* cannot participate with *completely*. Stageberg notes that this test is useful in potentially ambiguous statements. For example, "I bought some very cold cream" can only occur when *cream* refers to the dairy product. In this case, *very* and *cold* can work together. However, the same sentence is not grammatical if *cold cream* refers to the make-up remover; *very* cannot participate with *cold* in this case, indicating that *cold* belongs instead with *cream* as a compound noun. A similar test is that the first element of compound nouns cannot be inflected: *colder cream* is not possible when *cold cream* is the make-up remover.

On the semantic level, compound nouns can be examined in terms of the functional relationship of the elements, in which each "contribute[s] to the meaning of the whole lexeme (Poldauf, 1984, p. 121)." Quirk et al. (1975, p. 444) give the following examples:

"playboy" means the boy plays, i.e. verb + subject
"call-girl" means X calls the girl, i.e. verb + object

To compare compound nouns with noun phrases on this level, many authors [e.g. Quirk et al. (ibid.), Kreidler (ibid.)] give examples such as *Frénch teàcher* vs. *Frènch teácher*. Here, the first item, a compound noun, describes a teacher who teaches the French language; the second item, a noun phrase, describes a teacher who is of French origin.

Compound nouns can also be compared with noun phrases on the phonological level. Most English phonology manuals and ESL textbooks make the generalization that compound nouns are characterized by stress on the first (or penultimate) element of the compound (compound stress). In contrast, noun phrases carry more stress on the final element (noun phrase stress). Along the lines of the *French teacher* examples above, stress is assigned to these combinations as follows:

Noun Phrase	Compound Noun
dàncing teácher	*dáncing teàcher*
blùe bírd	*blúe bìrd*

Most compound nouns fit simply into such syntactic, semantic, and phonological parameters. When students master the ability to produce the compound stress pattern and apply it to the most common syntactic pattern, Noun + Noun, they will accurately stress the vast majority of English compound nouns. Therefore, this is a teachable pattern which can help students improve the rhythm of their spoken English.

However, the system is actually much more complex. Pronunciation teachers must take into account the following factors which complicate the teaching of compound nouns:

a. the unreliable relationships between the syntactic/semantic patterns and the stress patterns,
b. the generative nature of compound nouns,
c. the variability in stress of some compound nouns,
d. the effect of discoursal context on compound noun stress.

Unreliable Relationships

It is not always immediately clear whether word combinations constitute noun phrases or compound nouns, because neither the syntactic, nor the semantic, nor the phonological description is entirely adequate for differentiating them. Learners need to know when to apply the compound stress pattern, but they cannot use surface-level syntactic clues reliably. This is because there is no clear one-to-one correspondence between the stress pattern and syntactic/semantic patterns. For example, there are compound nouns which on the surface look syntactically like noun phrases, e.g. *témperate zòne, díning hàll, sócial skìlls*, but take compound noun stress. In these cases, learners would erroneously apply noun phrase stress where compound stress is required. Tests

such as those proposed by Stageberg are helpful to ESL instructors for such items, but not for students, who cannot be expected to use meaning as a guide to determine the status of a newly encountered term.

Furthermore, while most compound nouns consist of Noun + Noun, there are many which do not take compound stress, e.g. *stàr pláyer, chèrry píe, compùter sciénce.* In such cases, learners may overgeneralize the compound stress pattern and apply it erroneously to such constructions. Here, Stageberg's syntactic criteria help to the extent that they identify such constructions as compound nouns, but they do not help determine the stress. Part of the difficulty, then, is distinguishing which stress principles apply to which construction types.

Fudge (1984, p. 136) addresses such problems. He says, "There is surely no syntactic reason for saying that *Christmas cake* is a compound whereas *Christmas pudding* and *Christmas pie* are straightforward noun phrases, and yet the stress-patterns are totally distinct." He goes on to conclude that "we have little alternative but to recognise a second type of compound whose nuclear stress falls on the compound final, and whose stress pattern is therefore identical with the phrasal pattern."

Kreidler (1989, p. 222) takes a slightly different approach. He states that "there isn't always a clear criterion for deciding what is a compound and what is a phrase, except for knowing what the stress pattern is. We cannot say that compounds have one kind of meaning and phrases have another." Unfortunately the stress pattern is precisely what students do not know.

Furthermore, Taylor (1991, pp. 69 - 70) cites examples of Noun + Noun terms which are sometimes stressed as compound nouns, and sometimes stressed as noun phrases.

Poverty seems to be related to fàmily síze.
When buying washing powder I always buy the fámily sìze.

He explains that, "In the first case, we are talking about the size of a family, and in the second case, about the size for a family." He goes on to suggest that "the grammatical relationship between the elements" affects the status of the word combinations.

In an attempt to sort out the syntactic and semantic relationships involved, Poldauf (ibid.) suggests something of a continuum of compound noun-type constructions. He suggests that "composite lexemes" are often formed by syntactic procedures, and therefore are stressed on the final element. He provides over 30 semantically defined categories of composite lexemes, such as "attributes referring to a material," (p. 112), e. g. *mìlk chócolate,* and "nomenclature referring to plants," (p. 111), e. g. *glòbe ártichoke.* He classifies compound nouns not as syntactically derived, but as derived "by special procedures" (p. 106). He includes over 30 categories of compound nouns, which

take compound stress. However, the sheer number of categories, subcategories, and exceptions prevents the pronunciation instructor from gleaning much practical pedagogical help from this type of analysis.

Hence the qualifications for compound noun status are not entirely clear. Fudge suggests that semantic and syntactic criteria are sufficient, even though compound noun stress is not used. On the other hand, Kreidler seems to assume that the stress pattern is the crucial criterion.[2] While Poldauf's correlations of stress patterns with specific syntactic and semantic categories represent a helpful approach, they are lacking in practicality. Part of the challenge, then, is identifying criteria which are sufficiently reliable to provide students with more accurate, comprehensive access to the stress system.

Generativity

Another factor to consider is the generative nature of compound nouns. There is not a contained set of compound nouns to be learned; rather, native speakers regularly create novel compound combinations. One such example is *mood flurries*, a novel term used by a television broadcaster to refer to a light snowfall predicted for Christmas Eve (Allison Payne, WGN News, December 23, 1992). There is little doubt that all native speakers would use compound stress on this term; therefore native speakers do have some internalized awareness of compound noun stress. The terms *voice mail, laser printer,* and *health food* are examples of relatively recent compound noun creations (Safire, 1992). Compound noun coinages are also common in everyday speech, although most are less vivid. One can easily imagine: "He's going to use a *Chómsky quòte* for the *éssay ìtem* on the *linguístics tèst,*" although these terms as compound nouns are not part of the standard lexicon. Thus it is important to be aware of the prevalence and ongoing creation of compound nouns in the language.

The extent to which a given compound noun is stressed with compound stress could be related to the degree to which the combination is "felt" as a cohesive unit by the speaker. Taylor (ibid., p. 72) suggests that "the more fusion there is in the eyes of the speaker, the more likely it is that a compound will behave phonologically like a single word and have single [i.e. compound noun] stress." The speaker's perspective, then, could influence the stress of newly constructed terms.

Variability

Another complication in the analysis and teaching of the pronunciation of compound nouns involves the variability with which stress is placed on some of them. The variability may come from different sources. First, there is regional and dialectal variability (Kreidler, ibid.) -- for example, *ice cream, green beans, cream cheese.* Furthermore, Poldauf (ibid.) suggests that American English tends to use more compound noun stress than British English does.

Second, some word combinations which are relatively new may be in the process of becoming compounds. It is believed that many compound nouns evolve from separate syntactic elements with noun phrase stress into a cohesive unit with compound noun stress. Taylor (ibid.) cites revealing examples given by Kingdon in 1958. At that time, the following combinations were stressed as noun phrases; they now regularly take compound noun stress: *box office, vacuum cleaner, traveller's cheque, stage manager.* Thus the evolutionary nature of compound nouns could explain the current stress variability found in *case study,* a relatively new term.

Third, certain aspects of a speaker's intent contribute other types of variability. Bolinger (1986) suggests that stress can be placed on the last word of a phrase in order to create a climactic impact. When a compound noun falls in this position, the stress may shift to the last element. News announcers and other public speakers sometimes do this for emphasis. In the following example -- a sentence which ended that news item -- sports announcer Dan Roan (WGN News, December 23, 1992) applies noun phrase stress to the final term, which usually takes compound stress:

> Five-year vets are unrestricted free agents, though teams can protect one frànchise pláyer.

But Bolinger acknowledges that this phenomenon could also be an effect of reading aloud, wherein some speakers do not attend to meaning, and therefore fail to regard the compound noun as a cohesive unit.

Context

Another complication involves the issue of the larger context of the utterance. For example, *lóve stòry* and *lóve lètter* are in and of themselves compound nouns with compound noun stress. The stress changes when they occur together:

> He wrote her a lóve stòry. He also wrote her a lòve létter.

The principle here is that repeated information (here, the second *love)* is not stressed, but contrasting information is. This contrast causes the stress to shift to *letter* and the compound stress to be overridden. Sometimes, this principle causes changes in the stress of more than one compound noun; compare:

> I wanted meátbàlls, not Alfrédo saùce.
> I wanted meàtbálls, not meàt saúce.

Therefore, contrasts and other contextual factors can affect the stress of compound nouns.

In sum, most compound nouns are readily recognizable, and therefore the stress is readily teachable: Noún + Noùn. However, this pattern alone is far too

generic. Other factors -- variability, context, and various subcategories of syntactic and stress-related patterns (with their exceptions) -- all contribute additional complexities.

TEXTBOOKS

Most ESL pronunciation textbooks have dealt with compound nouns, but in varying degrees of detail. Some authors give only brief mention to them. *Clear Speech* (Gilbert, 1984) mentions compound nouns only in the teacher's guide (p. 20), yet uses compound nouns as practice items in the student text. For example, Gilbert's lesson on the intonation of thought groups contrasts the following two utterances without mentioning the role of compound noun stress:

1a. He sold his houseboat and trailer.
b. He sold his house, boat, and trailer (p. 6).

The Manual of American English Pronunciation (Prator and Robinett, 1985) provides just one paragraph on compound nouns, with four examples. *Improving Spoken English* (Morley, 1979) says little more. Morley briefly defines compound nouns as one of several sets of words which are stressed on "the first syllable (p. 14)." She does not address compound nouns in which the stressed syllable is not first, e.g. *communication gàp, defénse mèchanism;* nor does she address syntactic variables.

Most authors, however, define compound nouns more fully. *Sounds and Rhythm, A Pronunciation Course* (Sheeler & Markley, 1991) defines compound nouns as two words "used as a single noun," with "strong stress on the first word, (p. 25)." They provide several kinds of perception and production exercises, as well as periodic recycling of compound nouns throughout the rest of the text. Chan's treatment (in *Phrase by Phrase,* 1987) is along the same lines.

Accurate English (Dauer, 1993) also addresses compound nouns similarly. The author's emphasis is on the stress differences between compound nouns and noun phrases. Therefore her exercises focus on such contrasts as *baseball player* vs. *famous player* (p. 111) and *cheapskates* vs. *cheap skates* (p. 112).

Say it Clearly (English, 1988), *Communicate* (Smith et al., 1991), and *Sound Advantage* (Hagen & Grogan, 1992), define compound nouns more narrowly: as consisting of two or more nouns with stress on the first noun. Interestingly, they use non-nouns in their examples: *blackboard, greenhouse, rewind button, freeway.* These three texts have comparatively sparse practice exercises.

A unique feature of *Communicate,* however, is the treatment of compound nouns with three elements, e.g. *Consùmer Price Índex, wéight lòss pròg*ram. They suggest that there is often a two-element compound noun embedded in the three-part one, and that the stress stays on the first noun of the two-element compound.

Relatively few textbooks address the complexities of compound nouns much further. While Handschuh and de Geigel (*Improving Oral Communication*, 1985) define compound nouns much as other authors do, they also treat compound proper nouns. They explain that these are usually stressed on the second (or last) element, e.g. *Easter Sunday, Lake Michigan*. They give a sizeable list of examples, and discuss some of the exceptions.

Dickerson's *Stress in the Speech Stream* (1989) provides perhaps the most comprehensive treatment of compound nouns in a pronunciation textbook. While his definition is much the same as that of other authors, he acknowledges that "we cannot apply (compound noun stress) with our customary precision (p. 15)," and that, in some cases, "...if you do not know the meaning of the construction, you will not be able to predict the stress with confidence (p. 14)."

Dickerson treats the following Noun + Noun constructions which do not take compound noun stress, but instead are stressed on the last element:

1. Names of people and places: *Bill Rogers, New York City*
2. Names of publications: *London Times, National Geographic*
3. Titles: *Assistant Professor, Surgeon General*
4. Initials: *UFO, Ph.D.*
5. Proper names in the first noun: *Colt forty-five, Concord grapes*

He also treats the following combinations which do not consist of the more obvious, reliable Noun + Noun, but which take compound stress:

1. Adverbs and neutral prefixes in compound nouns: *hideaway, downfall*
2. -ing + Noun: *printing press, magnifying glass*[3]

PEDAGOGICAL IMPLICATIONS

Again, despite the complexities, there are enough compound nouns to warrant the time and effort spent on their unique prosodic patterns, and obviously the most common and straightforward -- and prolific -- category is Noun + Noun. However, how much more of the system can a pronunciation instructor reasonably expect students to master? Following are some recommendations:

1. Students need to know when they can use compound noun stress with confidence. In addition to some of the systematic exceptions discussed below, another extremely reliable clue to compound noun stress is the way the word is written. That is, almost all word combinations which are written as one word (e.g. *background, toothbrush*) and words which are hyphenated (e.g. *looking-glass, story-telling*), take compound noun stress (Dickerson, 1989). These combinations would include those with letters as nouns, e.g. *e-mail, v-neck, t-test*.

2. Let students know that the system is complex. If students are made aware that there are some regularities behind some of the apparent contradictions, they can begin to gain more of a sense of control over the system. These regularities include the effect of contextual factors, and some of the various systematic exceptions. This strategy may make other inconsistencies, such as variability and other less "teachable" exceptions, less overwhelming.

3. Address some of the major subsystems explicitly. Students can learn to recognize sets of words which take compound noun stress but look like noun phrases, and sets of words which take noun phrase stress but look like compounds. This will enable them to stress a much greater number of such constructions with accuracy. Dickerson's categories, outlined above, provide a strong base of the most clear-cut, easily manageable, and generative subsystems.

4. Address minor subsystems based on students' needs. It may not be necessary for dance majors to learn the stress of chemical compounds. Botanists, on the other hand, may wish to learn the stress patterns involved in plant nomenclature. Instructors must determine what types of constructions, and the level of detail, their students need.

In addition to Dickerson's categories, the following subsystems may prove to be useful. Even if these are not explicitly taught, instructors still may find such subcategories helpful as potential explanations of terms they may encounter.

Noun + Noun: Noun phrase stress

a. N1 is a material out of which N2 is made (Fudge, ibid.).
Examples: *silver dollar, peach pie, glass slipper*
Exceptions: *banana bread, ginger snap,* N1 + *juice,* e.g. *orange juice, apple juice*

b. N1 is the time N2 takes place, or is due to appear:
Examples: *afternoon nap, 8:00 class, morning dew, holiday traffic*
Exceptions: *night classes, day shift*

c. N1 refers to a person or group of persons.
Examples: *child actor, group therapy, male stripper, team spirit*
Exceptions: *faculty meeting, peer pressure*

d. N2 consists of three or more syllables. While this subsystem is less consistent, it may explain some occurrences. Poldauf (ibid.) suggests that different combinations in the number of syllables and in word stress of each individual element sometimes play a role in effecting different stress patterns.
Examples: *minority government, situation comedy, transistor radio*
Exceptions: *conservation policy, correlation coefficient*

e. N1 is *computer*. These relatively new terms may be in transition.
Examples: *computer programmer, computer science, computer graphics*
Exceptions: *computer chip, computer disk*

In terms of compound nouns consisting of Adjective + Noun, one clue may be the meaning of the noun. Bolinger (ibid.) suggests that if the noun is empty or generic in meaning, relative to the adjective, stress may stay on the adjective. This clue, while useful to instructors, may not be viable for learners who are not advanced enough to rely heavily on interpreting the meaning of a term. This phenomenon seems particularly common in adjectives ending in *-al*.

-al examples: *social studies, clerical help, vital signs, personal life, dental appointment*
Other examples: *nervous system, the good guys, little folk*

5. Continue to collect compound nouns, look for teachable regularities. This is an ideal opportunity for teachers to become learners. When we are conscientiously involved in analyzing our own language, and creating useful materials based on our findings, we -- and our students -- benefit. Furthermore, when we share this examination process with our students, they in turn are encouraged to become their own teachers: to look for and analyze word or stress patterns they encounter.

It may be unrealistic to expect that further research into the syntactic, semantic, and stress patterns involved in compound nouns will result in a simplification of the system for pedagogical purposes. Yet because compound nouns are such a vital, generative part of the English language, their unique prosodic patterns cannot be ignored in the pronunciation classroom. The principles and patterns proposed, however, can serve as guidelines for instructors to consider when teaching compound nouns.

ACKNOWLEDGEMENTS

John Levis, Greta Muller Levis, and Wayne B. Dickerson kindly contributed valuable comments on earlier versions of this paper.

THE AUTHOR

Laura Hahn is a Ph.D. student in Educational Psychology at the University of Illinois at Urbana-Champaign. At UIUC, she has administered the campus program for international teaching assistants and developed a pronunciation course for them. She has also taught Pronunciation for Academic Purposes and a pronunciation practicum for MATESL candidates.

NOTES

[1]It is actually difficult to determine the part of speech of some of the elements. For example, *fall* can be either a noun or a verb. Poldauf (1984) seems to suggest that the part of speech is determined by the underlying functional relationship of the word to the whole compound. For example, in *nightfall*, night is falling; hence *fall* is a verb. Similarly, *pick* is a verb in *toothpick* because it refers to an action done to the tooth (p. 122).

[2]Kreidler himself seems to contradict this definition. At one point, he does acknowledge that "some compound nouns have stress on each word of the compound," (p. 220).

[3]Poldauf (ibid.) points out that combinations containing the *-ing* form in the first element only take compound noun stress if the semantic relation implies "intention or purposive causation (p. 118)." Therefore, a *bathing suit* is intended for bathing, and the purpose of a *teaching assistant* is to teach. He goes on to list other types of *-ing* collocations which do not fit this description, such as *living memory, founding fathers, fighting chance.*

REFERENCES

Avery, P., & Ehrlich, S. (1992). *Teaching American English pronunciation.* Oxford: Oxford University Press.

Bolinger, D. (1986). *Intonation and its parts.* Stanford: Stanford University Press.

Brazil, D., Coulthard, M., & Johns, C. (1980). *Discourse intonation and language teaching.* London: Longman.

Chan, M. (1987). *Phrase by phrase: Pronunciation and listening in American English.* New Jersey: Regents-Prentice Hall.

Dauer, R. (1993). *Accurate English: A complete course in pronunciation.* New Jersey: Regents-Prentice Hall.

Dickerson, W. (1989). *Stress in the speech stream: The rhythm of spoken English. Student Text.* Urbana, IL: University of Illinois Press.

English, S. (1988). *Say it clearly: Exercises and activities for pronunciation and oral communication.* New York: Collier MacMillan.

Fudge, E. (1984). *English word-stress.* London: George Allen and Unwin.

Gilbert, J. (1984). *Clear speech: Pronunciation and listening comprehension in American English.* Cambridge: Cambridge University Press.

Hagen, S. & Grogan, P. (1992). *Sound advantage: A pronunciation textbook.* New Jersey: Regents-Prentice Hall.

Handschuh, J. & de Geigel, A. (1985). *Improving oral communication: A pronunciation oral-communication manual.* New Jersey: Regents-Prentice Hall.

Kreidler, C. (1989). *The pronunciation of English: A course book in phonology.* Oxford: Basic Blackwell Ltd.

Morley, J. (1979). *Improving spoken English: Intensive personalized program in perception, pronunciation, practice in context.* Ann Arbor: University of Michigan Press.

_____. (1991). The pronunciation component in teaching English to speakers of other languages. *TESOL Quarterly 20*(2), 207 - 225.

Pennington, M. & Richards, J. (1986). Pronunciation revisited. *TESOL Quareterly 20*(2), 207 - 225.

Poldauf, I. (1984). *English word stress: A theory of word-stress patterns in English.* Oxford: Pergamon Press.

Prator, C. & Robinett, B. (1985). *Manual of American English pronunciation.* New York: Holt, Rinehart and Winston.

Quirk, R. & Greenbaum, S. (1975). *A concise grammar of contemporary English.* New York: Harcourt Brace Jovanovich, Inc.

Safire, W. (1992) Retronym watch. *New York Times Magazine.* November 1, 1992.

Sheeler, W. & Markley, W. (1991). *Sounds and rhythm: A pronunciation course.* New Jersey: Regents-Prentice Hall.

Stageberg, N. (1971). *An introductory English grammar.* New York: Holt, Rinehart, & Winston.

Stevens, S. (1989). A "dramatic" approach to improving the intelligibility of ITAs. *English for Specific Purposes: An International Journal 9*(3), 181 - 194.

Taylor, D. (1991). Compound word stress. *ELT Journal 45*(1), 67 - 73.

IDEAL 7, 1994

WHERE PHONOLOGY MEETS ORTHOGRAPHY

Thomas R. Hofmann

When phonology is expanded to include more than one dialect and we make a 'cross-dialectal' phonology of the several standards of English, it becomes possible to include the (systematic parts of) orthography as an other dialect. This turns out to be what is sorely needed by foreign learners of English, as well as by natives learning to read. The role of rules relating orthography to pronunciation as well as exceptions are also considered. Some implications are sketched for theoretical linguistics as well.

The main point of this paper is to argue for a principle: that an adequate cross-dialectal phonology–a phonology that works for at least the major dialects or accents of a language–naturally includes the regular parts of its orthography. If this is true, it has serious implications for the teaching of language because language students must also learn how words are written. Learning the writing of words together with their pronunciations can be more efficient and yield better results. It also has strong implications for theoretical linguistics as the native speaker has the writings of words unified in some way with his phonology. As well, the regular parts of an orthography influence the phonological structure of a language through its historical drift. First, however, we must look at what a cross-dialectal phonology is. We will follow here the American usage of 'dialect' for a way of speaking but are concerned only with the pronunciation (what is sometimes called 'an accent').

The idea of a phonology that is valid for the various dialects of a language has been an attractive ideal for some generations of linguists, but how it could work has not been discovered until recently. Daniel Jones (1950) proposed the 'diaphone' as the phonemic unit of such a cross-dialectal phonology, but began from the (then universal) idea of a standard dialect and looked at the reflections of its phonemic units in other less prestigeous dialects. This was not adequate, for it saw all other dialects as more or less accurate renditions of the standard.

Henry Lee Smith's 'morphophonemes' (1967) were units of pronunciation that do not vary in different linguistic surrounds–stress and suffixes for the most part (the now standard concept)–and at the same time did not vary between dialects. With the great flexibility of generative phonology in the 1970's which reduced morphophonemes to little more than Chomsky's 'systematic phonemes', Bailey (1972) tried to describe all dialects with a 'pan-dialectal' phonology. That however was possible only with great difficulty, and Luelsdorff (1975) showed it to be irrelevant to the goals of lingusitics. Few if any speakers are familiar with all the dialects of a wide-spread language such as English, nor do the various dialects influence the development of the language in anything like equal proportions.

Yet the goal has persisted. Linguistic theory can describe only the phonology possessed by a single speaker (usually an ideal person who speaks a standard). It thus has limited relevance to real people who are invariably aware of aspects of other dialects, and often enough can speak in more than one way. Indeed, nearly all speakers can vary between a relaxed, allegro way of speaking and a more formal and carefully enunciated way. But it is not just the relevance of linguistic theory that is at hand.

When we teach a language to a non-native speaker, it is seldom enough to teach a single ideal dialect. For countries with a single high-prestige standard dialect such as Japan or France, or even England, the language is taught that way, partly because the standard is considered the only option for an educated native or for a foreigner and partly because linguistics has nothing else on offer than a single dialect. In North America, there is a greater sense of equality among dialects, and foreigners are not necessarily taught the contemporary broadcast standard, General American (GA hereafter). Also, the US is moving toward losing its post-vocalic /r/.[1] Teachers use some compromise between their native dialect and the broadcast standard.

It is not enough that the student learn to speak in a standard way, so that natives can understand him, he must also learn to understand natives. In strongly centralized languages, most natives can make a fair rendition of the standard for the sake of a foreigner, but this is far from true of the US, or Scotland, or Australia, for US or UK standards. In effect, a student has not learned enough English to converse in general until he has some tolerance for varying ways of speaking, and that means he needs to learn at least which of the features of pronunciation are common and which are geographically variable, and to have some idea of what variation is possible.

I have found it a useful exercise for students in Japan to give classroom directions occasionally in an Australian accent, a US Black accent, a South Bostonian accent, and even a Scottish accent, even though I am poor at rendering them, especially the latter. The range of pronunciations prepares them for what they may and will meet, and it helps them discover what is common to all these varieties. No matter that a teacher is not very good at imitating an accent; the imperfect imitations will still guide students to relax their ideas of correct pronunciation in the right direction, and to learn what aspects are the same in all dialects.

This is something that even native children have to do. When one listens to only one dialect, one can use features that may be absent in another dialect. Only with experience does a person learn to use the features that are common across dialects. And those features, I would argue, tend to persist over time and are the really important features in pronunciation.

On a practical level, dictionaries and teaching materials need to indicate pronunciation in a way that is valid for different dialects, at least for the two most important standards of English, the British and US broadcast standards. Learner's dictionaries are being produced in England, but they give pronunciation primarily in the British standard, though progressively better attempts are being made to include GA pronunciations as well. This addition of GA may not help students, however. Rather it may confuse them with too much information. And, it is not enough for a student living in Georgia and being taught GA but hearing Southern varieties around him, on television and even from teachers.

As well, except for texts devoted to pronunciation, teaching materials seldom include any indication of pronunciation at all, for being unable to choose which pronunciation to include. A publisher naturally does not want to limit the sales area of his texts by giving only one dialect.

Faced with these needs, a new notion of cross-dialectal (XD) phonology emerged, and has been described in its theory (Hofmann, 1991, 1990). To demonstrate it in the worst possible case (other than Chinese), the vowel pronunciations of English are reduced to units (diaphones if you will) that are pronounced in slightly different ways in different dialects. In a nutshell, an XD phonology includes a few extra diaphones that are pronounced one way in one dialect and an other way in the next. Moreover, it does not try to cover all the dialects of English, but only the major ones that all speakers have some knowledge of and that all foreigner learners should be aware of. The XD phonology given in the Appendix has apparently managed this with only one or two extra vowel units for the English vowel sounds, for the GA and the BBC standards of pronunciation. Yet it appears valid for a wide range of dialects, from Jamaican and Australian to Scottish and Irish, with a small fudge for the latter two. To give an example, Northern English dialects 'merge' (i.e. pronounce alike, as a single phoneme) <ŭ> and <o͝o> (I will use <...> to identify diaphones), as in *but, mud, duck* and *foot, cook, could*. An other example is that most dialects merge <ŭr> and <ĭr> as in *fur, fir,* while strong Scottish does not.

When students learn pronunciation with these units, which correspond closely with the traditional English notions of long and short values for vowel letters, they are prepared for teachers from any of these dialects, or to accomodate to these varieties in daily life. If exposed to them early in their education, they will learn to listen mostly to what is invariant across dialects. In this way they can be much less sensitive to and more tolerant of variation. They will not be like a Japanese colleague of mine, an English teacher who took pride in his excellent English, who found on his first visit to the US that he could not communicate at all with his taxi driver except in writing!

Thus are the needs and promises of an adequate cross-dialectal phonology. It has not come out of linguistic theory because theoretical interests are pursuing other, 'hotter' topics. As well, linguistic theory continues to subscribe to a self-limiting assumption of Bloomfield's, namely that there is a 'community' of speakers who all talk alike, so linguistics proper has never bothered to explore the reality of dialectal and register variation that is ever-present. Those few that do venture into this area (eg. Bailey, Labov, Smith, Jones and, I guess, myself) are seen to be dabbling in interesting but peripheral topics.

Apparently applied lingusitics will thus have to make its own theory, much as engineering disciplines make the theory they need while pure physics pursues the structure of quarks. However, the theory promises to become important in linguistics and psycho-linguistics because it is a more realistic model of the native speaker. A perhaps bigger reason for it to become important is that it implies that the written form of a literate language is an important aspect of the phonology that speakers internalize, as we can now show.

ORTHOGRAPHY

When people learn another dialect, as when a child learns a standard way of pronouncing at school, they combine it with their earlier way of pronouncing to form an XD (cross-dialectal) phonology. As such they learn to speak and to understand in both their native and the standard ways of pronouncing. How this is done is not known yet, but it is done, and may be repeated many times as one learns to speak in a number of fashions. Even those born into a standard dialect who never learn to speak in any other style still learn to speak in different registers, most notably a relaxed allegro fashion and a more formal, clearly enunciated way. They also learn to understand people from other dialects, eg. popular singers.

Learning a phonetic orthography–a way of writing based on sound–is no different; an XD phonology is formed that works for both pronounciation and writing just as one is formed to incorporate a new dialect into one's knowledge. A phonetic orthography is no more nor less than a written dialect, and learning it influences one's perceptions of words to the degree that the adult no longer hears sounds but sequences of letters. Learning to read and to write is not something that is simply added to an individual's knowledge of his language, but it profoundly influences the person's knowledge of its structure, not only in the details of how some words are pronounced but even in the nature of pronunciation.

The existence of a few 'spelling pronunciations' (considered as errors) is well known, but this process is far more extensive than we realize, in English even. There are large numbers of words like *albino, plaza, Maria* and so forth that have two pronunciations. One has a short or long value given to the stressed vowel; the other has a 'continental' value (as in Spanish or many other languages). These latter have been generally gaining ground for the last century (Wells, 1982; Bollinger personal communication). One of these pronunciations is a spelling pronunciation, showing the importance of spelling in the phonological evolution (and thus the structure) of our language. This is why Coulmas (1989) could observe that writing systems of the world tend to match the phonological structure of the languages they are used with.

Because a sound-based orthography is internalized, along with a range of pronunciations, most native speakers of a literate language have a combined representation. This is why they can write down a new word, or pronounce a new brand name, without much doubt even in a nominally unphonetic language such as English. In fact, it means that words are commonly stored mentally in something like written forms and pronounced on that basis. The *faux amis* of French and English are not words with different meanings that are pronounced alike; they are words that are written alike. This shows that similar writings (with divergent pronunciations) cause problems, not similar pronunciation. As well, probably every person who speaks both French and English has made mistakes of pronouncing French words in English when they don't happen to exist in English, and vice-versa. Examples can be cited ad infinitum to show that at least between English and French (which share a large written vocabulary but very little in pronunciation), it is the written form that people pronounce in the other language. If this can happen between different languages, as different in pronunciation as English and French, it surely happens between different dialects of the same language. When we listen to another dialect, then,

we must be making use of written forms and our knowledge of how the other dialect pronounces them.

This idea that writing can be treated as another dialect in an XD phonology will not be accepted too quickly in linguistics, for writing has long been excluded as a part of language. Yet it must be accepted as a possibility, and in view of the interplay between pronunciation and spelling, it must be accepted as plausible. It will be verified by observing how children's pronunciation is modified as they learn to read and write, always in a direction that is more consistent with the orthography.

ENGLISH ORTHOGRAPHY

Some will deny that English spelling corresponds to pronunciation, but the work of Dickerson (1985, 1990, 1992) among others shows that this is not true. On the most basic level, a letter P for example corresponds to a phoneme /p/, and essentially[2] all English speakers know this. Linguists and spelling reformers have often been delighted, or discouraged, to note the many examples where the match is not simple and perfect, but if we look at each letter of the alphabet in turn, only a few have more than one systematic way of being pronounced, given that we are intelligent enough to take some combinations like PH, CH, SH as single units. True, there are exceptions to nearly every simple rule, like the P in *pneumonia*, but cast these exceptions aside (and identify them as exceptions to the student) and there is a vast regularity in English spelling that any learner or teacher would be a fool to ignore.

Unfortunately, thanks to linguists and to having learned many kanji by rote, Chinese and Japanese students often try to learn English words without utilizing the knowledge, eg., that P stands for /p/! This is a gross waste of effort to learn each word's pronunciation and its spelling independently, and it fails them when they meet a misspelled word, or a brand name or a person's name, or a new word. When literate natives meet a new name or a new word, they may have some doubt as to how it should be pronounced, but seldom can they imagine more than two ways to pronounce it. And if they guess wrong, others can still understand them because we could all make a wrong guess. This is something foreign students must learn, without which they are unnecessarily handicapped in reading and writing, even in the minimal sort used in daily life (eg. reading bus stop names, or in a supermarket). They must learn the connection between pronunciation and spelling, to the level that they can make guesses that we can sympathesize with.

Given then that there is system and regularity to spelling and pronunciation in English, and that the foreign student must learn it, it is far wiser to learn the language with these two combined. In learning French, for example, one learns that OU stands for /u/, and one does not need to look up each word with OU in it to see how it is pronounced. In fact, one wisely forgets the symbol 'u' and just thinks of the sound /u/ as OU, because French U is pronounced /y/. This is learning a language through its (native) orthography, and is a far faster and a more useful way of learning if it can be managed. The problem with English, however, is that there are so many exceptions, and the rules are so complex (Dickerson has been untangling them for some years) that it has generally been thought to be impossible. It is not. But to leave it to the students to discover what capable linguists

can spend decades on means that they will not do it well. In teaching English speaking children to read and spell, as well, leaving it to children to discover first that there is a system, in spite of the many exceptions that they learn early, and then what that system is in detail, implies that they also do not learn it well, or nearly as fast as they could. Merely to identify which words are exceptions would help them immensely.

ORTHOGRAPHY AS THE PREEMINENT DIALECT

In a literate society, most people learn the principles of writing more or less well, and the leaders and pace-setters can invariably read and write well. If the orthography or writing system is based on sound, and nearly every one is (even Chinese), it is an aspect of the language that everyone knows to some extent.

The validity of XD (cross-dialectal) phonology lies in its accurate description of at least the well-known standards. If it includes these, then it is present at least in part in the heads of all the speakers. As everyone also knows how to spell words (with some exceptions that fill the lists in spelling contests), and these spellings correspond to sounds, then an XD phonology must include an orthography for a literate language. This explains the naive identification of writing with a language. Except for those who have been taught in linguistics that writing is not part of a language,[3] perhaps everyone in every literate society takes the written form of a word as its 'real' form. Thus in English, we ask how we should pronounce a word like *albino*, not how we should write a word [kʊd]. And the answer is with either a long-I or a continental-I – for uncommon words, any way that is consistent with the writing.

As any school child knows, it is far more important to know the correct spelling of a word than to know its correct pronunciation, if it has only one (admitting variation in dialect and register). The written word has an importance that far outweighs the spoken word for the naive, and we can bring this fact into linguistics by accepting the orthography as the preeminent dialect.

Typically, orthographies are more differentiated than any spoken dialect. At least some sounds have several ways of being written, even in Spanish, while normally a given symbol or combination of symbols has only one proper way of being pronounced (conditioned sometimes by context) in a given dialect and register. English is the major exception to this latter, having several ways to pronounce each vowel letter that is only partly and unreliably (Upward, 1988) marked in the spelling of the rest of the word.

In being more differentiated than any spoken dialect, an orthography can often serve as an XD phonology itself, as suggested above for French, its letters and letter-combinations being pronounced in different ways from dialect to dialect. Where it is not sufficient, the orthography can be supplemented by diacritic marks to make a 'learning orthography' that serves as an XD phonology for most if not all spoken dialects and the standard orthography itself.

An example of how this might work for English can be seen in adopting a device from French, to add a cedilla (originally a small S written under a C) when a C is

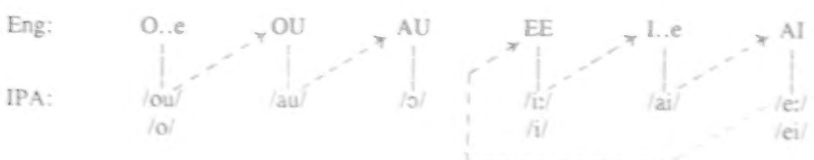
pronounced /s/, and extend it to CH when that is pronounced as /ʃ/, as·in *Chicago, machine* and so on. If such marks are really useful, however, there is a possibility that they will come to be adopted into the orthography as has happened in a number of European languages.

I have done this for English vowels, to make an 'English Teaching Alphabet', using the more or less standard 'bar' (macron) and 'cup' (breve) for long and short values for vowel letters (as in previous editions of *The Concise Oxford Dictionary*), and supplemented that with a 'hat' (circumflex) for continental pronunciations. These are applied to the 5 vowel letters (Y and W are treated as variants of I and U when needed) to give 15 vowel diaphones, plus <o͝o, o͞o, o͞u, o͞ı, a͡u> (see Appendix). It is sufficient to indicate the pronunciation of nearly all of the words in major dialects, as well as their written forms (by erasing the diacritics). The letters U, O, and A also have a fourth pronunciation each, <o͝o, ŭ, ŏ> respectively, in a few dozen common words like *pūsh, pūt; cōme, lōve; wăsh, wȧrd,* so these are marked with two dots (diaresis) to have a nearly perfectly self-pronouncing way of writing English. There are a dozen exceptional words that must be learned by rote, but if pointed out, they should cause no great problem.

This English Teaching Alphabet (ETA) is thus a good medium for teaching English to foreign students, as users learn both the writing and the pronunciation of a word (in all major dialects) at once, with little more effort than learning the spelling. And they learn without additional effort the connections between sound and spelling. It is also a good medium for initial literacy training for native children, like the i.t.a. (initial teaching alphabet) or other American systems, without being biased for British or American pronunciations, and working well for whatever native dialect the child has.

APPLICATIONS OF XD PHONOLOGY AND IN PARTICULAR ETA

There is a recent trend in England to use IPA (International Phonetic Alphabet) symbols in dictionaries to show pronunciation. This makes it superficially easier for foreigners using a learner's dictionary to make a passable rendition of the British standard pronunciation, for the symbols look like symbols in their own language and have roughly the same (but never quite the same) sounds. Furthermore, it looks scientific, as linguistics uses those symbols with approximately constant value for any language. Nevertheless is it an unnecessary burden for an English learner as well as a native English speaker to learn a second way of spelling, for sound only, and it misleads the foreign learner because those symbols, as scientific and as international as they are supposed to be, are pronounced differently for each language. It is worse than this, however, as those symbols directly conflict with the symbols used to write English:



This makes it harder to learn to spell or to pronounce from spelling, for both the native and the foreigner–an unmitigated blunder in the best British tradition, but some American dictionaries are also using a few IPA symbols now, too.

Up to its most recent, Europeanized edition, the *Concise Oxford Dictionary* indicated pronunciation in an efficient and informative way, called 'pronunciation without respelling', by simply adding long and short marks to the spelled form of the word. Spelling is thus united with pronunciation, not only saving space in dictionaries, but also in learners' memories, and time in learning. Instead of two representations for sound and for writing of every word, without a clear relationship between them, one representation with the relationship between spelling and pronouncing clearly marked will do.

Of course, a few exceptionally pronounced words needed to be given a pronunciation apart from their spelling, but for nearly all words, this was enough, saving dictionary space and user difficulty. If 5% to 10% of an average dictionary entry is devoted to giving the pronunciation, getting rid of it saves 5% to 10 % of the size and weight of a dictionary. And it is eminently more usable than a bunch of esoteric symbols that conflict with the spelling. A comfortable side-effect is to identify which words are exceptions to the general system of English – those like *busy* that must be respelled to show their pronunciation, <bĭzzy>.

The same applies to learner's dictionaries. Although it may be a bit more initial work learning what the long and short values of the vowel letters are, once they are learned, they provide an accurate guide to pronunciation regardless of dialect, and they don't allow the half-learning of taking IPA symbols to have the values of vowel letters in their native language.

What can be said for dictionaries needs to be said many times louder for teaching materials. The US Army Language Program in World War II showed that a language can be learned in a very short time if the learners are not burdened with illogical and difficult writing systems but provided instead with a phonemic transcription. It should have been clear that the most efficient way to teach English is to teach the students phonemic transcription and let them initially read and write in that only. In fact, it cannot be doubted that if a beginning student is given a phonemic transcription of Texan English, for example, and can read and write only that for a few months, that he will be speaking rather like a Texan, far more so than most students today approach any variety of English. Phonemic transcription is a powerful language teaching device, but it is used only for teaching Japanese and some other Asian languages.

Phomemic transcription is not needed for most European langauges as they have diacritic marks that give the exact pronunciation. English however has no such devices, so learning it is burdened by having to learn both spelling and pronunciation.

The excuse for not using phonemic transcription in English classes is that the teacher and the student both realize that speaking English is not enough in today's world. Writing is important as a passport for tourists, and rather more important for studying abroad. Learning a phonemic transcription would be nice, but is almost universally seen as extra, and largely unnecessary work. For most European languages, the orthography can serve as

a pretty accurate XD phonology; once students get acquainted with it, they rightly abandon IPA symbols and learn instead the language.

This doesn't work for English. Exceptions aside, our orthography is an accretion of too many different systems of spelling; one cannot look at a word and tell how it should be pronounced, at least until one is quite accomplished at English. Even then, one can never be sure.

The usual and highly unsatisfactory syllabus (especially in Japan) includes a course on phonetics, where the IPA symbols are introduced and practiced. Besides the fact that the class is soon over and may be forgotten with relative impunity, even the learning that does go on may be hard to apply. Japanese students are taught to distinguish [i] and [ɪ], for example, and many learn it, but they don't know which words have [i] and which words have [ɪ]. They practice this constrast only with 20 or so words in the phonetics class, and forget most of those. When they meet any of the thousands of other words with these sounds, they don't know which sound to pronounce. The same, several times worse, goes for [æ, ɑ, ɔ, ʌ, ɑr, ɚr], all pronounced the same in Japanese, and hard for them to distinguish.

In the same phonetics class, however, they learn to distinguish [b] and [v], but here their knowledge can be applied to speaking, reading, hearing, and even writing. As [b] is always written B, and [v] as V, and never the reverse, they know which sound to pronounce if they know the written form of the word. Because they have often learned the written forms before they go to phonetics class, the phonetic lessons can result in an almost immediate improvement in pronunciation outside the phonetics class. This works for the consonants in English. There are a few exceptions, primarily silent letters, but these are easily noted and remembered.

It emphatically does not work for vowels in English, as there are alternate spellings for many vowel sounds, and several pronunciations for most single vowel letters. A stop-gap rule for the example above is to teach students to decide between [i] and [ɪ] by looking at the spelling: If it is spelled with an E, as in EE, EA, IE, EI, it is surely [i] and never [ɪ], but if it is spelled with a simple I, it is almost always [ɪ]. Unfortunately, even this doesn't work perfectly, for there are also a few continental pronunciations, as in *police*, *machine*. A similar but less perfect rule of thumb can be given for the other group of vowels, based on spelling with A, O, U, AR, and UR/IR.

Thus a more satisfactory approach is to find and teach the rules whereby a native English speaker can be fairly confident of the pronunciation of a word (see Dickerson, 1985), but this is limited by the fact that there are a large number of exceptions and they are mostly high frequency words that the foreign student must deal with first. It is also limited by the fact that there are many words with vowels pronounced with continental values, and they are continually increasing.

If the rules for pronunciation from spelling were simple as they are in French, German or most European languages, that would be enough. In English, however, they are fairly complex, and also unreliable (eg. the one about a stressed vowel being 'long' if separated

from a following vowel by only one letter). Thus we need diacritics for pronunciation until the learner can internalize the rules.

Granted that students must eventually learn such rules, either by being taught or by discovering them themselves, there is a better way for beginning students than to load them with a pile of rules and turn them loose on English orthography. The ETA described above is simply a few diacritics added to ordinary spelling, but it gives the pronunciation accurately. The combinations of diacritics with vowel letters must be learned, but that is needed anyway to learn the rules above. And once it has been learned, students can be given text with ETA diacritics (the teacher can add them as needed) and forced to write with them, too. In this way, students can approach the efficiency of learning with a phonemic transcription, with very little extra work, and be learning the written form of the language at the same time.

I am thus convinced that beginning materials need to be supplemented with such diacritics.[4] Beginning students will naturally learn orthography and pronunciation in a coordinated and effortless fashion, and will no doubt discover some of the rules for pronunciation without prompting. Moreover, as ETA is valid for most dialects, learners will be much less confused by teachers from different regions who pronounce differently.

It thus seems clear that language learners will benefit greatly from adopting some form of ETA marking for beginning students. Publishers need not shy away from indicating pronunciation as it applies to all major dialects. Last, if the marking is withdrawn for the vowel pronunciations as they are explained, the learners can discover for themselves or be told the rules (and their limitations). And this can be done one rule at a time, separating the task into independent subcomponents for faster learning.

The benefits of ETA do not stop there, however, as those same materials can be a great help in native literacy training. Teaching reading with the i.t.a. (initial teaching alphabet), which was phonemic for standard British pronunciation, showed that children could learn to read in incrediby less time than by the ordinary orthography with all its conflicting patterns and exceptions. While the ETA has extra symbols, often several for any vowel phoneme in any particular dialect, it is neutral between dialects, and has no strange and foreign-looking symbols that teachers have to be taught and parents need to get used to. As children have little problem in learning several symbols for the same thing (eg. '4', 'IV', 'four'), teaching reading through ETA promises much the same benefits as the i.t.a. without its drawbacks – and there is not even a conceptual problem in their transition to ordinary orthography (the i.t.a.-trained children had few real problems, though it seemed like they ought to have). As such, I hope to see native language reading texts sprouting ETA diacritics someday, to allow us to catch up to the rest of the world in literacy.

ACKNOWLEDGEMENTS

The students of Toyama, Kanazawa, and Hokuriku Universities are to be thanked for their participation (and suffering) in the development of the English Teaching Alphabet (ETA).

THE AUTHOR

Professor Hofmann has divided his time between teaching linguistics and English at several universities in Japan (now with the graduate school of the Prefectural University of Kumamoto, Japan). This unique environment has allowed him to see what is needed in language teaching and to develop the theory to underlie it. His main interests lie in semantics, pragmatics, and theory, but he also has a strong interest in the foundations of phonology.

NOTES

[1]With the rise in status and power of the Southern states as well as Black speakers. Consider the number of recent presidents without this /r/: Kennedy, Johnson, Carter, and Clinton – or the dialect of political power (Washington).

[2]All but for explicable exceptions, as eg. the blind, deaf and so on.

[3]There was, and still is, good reason for this dogma, but dogma it is, and is easily shown to be partially false, at least for a literate language. Not least is the point here, that it is the preeminent dialect.

[4]I have made a close definition of ETA available to teachers or publishers who want to use it. It is, however, copyrighted to avoid a thousand varieties arising, or its misuse. If you want to do something similar, please call it something else, but please also consider the disadvantages of having two or five or ten different competing systems.

REFERENCES

Bailey, C-J. N. (1973). *Variation and linguistic Theory.* Arlington, VA: Center for Applied Linguistics.

Coulmas, F. (1989). *The writing systems of the world.* New York: Harper & Row.

Dickerson, W. (1985). The invisible Y: A case for spelling in pronunciation learning. *TESOL Quarterly* 19:303-316.

Dickerson, W. (1990). Cracking a symbol-sound code. *Issues and Developments in English and Applied Linguistics* 5:39-64.

Dickerson, W. (1992). Orthography: A window on the world of sound. In Brown, A. (Ed.), *Approaches to Pronunciation Teaching.* New York: Macmillan, 103-117.

Hofmann, Th.R. (1989). Showing pronunciation in EFL teaching. *Journal of Simplified Spelling Society* 3:13-19.

Hofmann, Th.R. (1990). Symbols for vowel sounds in the university classroom. *The Language Teacher* 14:19-24.

Hofmann, Th.R. (1991). Cross-dialectal phonology, with application to English vowels. *Bulletin* 15:21-71. (Hokuriku University, Kanazawa, Japan.)

Jones, Daniel (1950). *An outline of English phonetics.* Cambridge: Heffer.

Luelsdorff, P.A. (1975). Dialectology in generative grammar. In Dillard, J. (Ed.) *Perspectives in Black English.* Hague: Mouton.

Smith, H.L. (1967). The concept of the morphophoneme. *Language* 43:306-41.

Upward, C. (1988). *English spelling and educational progress.* Birmingham: Committee for Lingusitics in Education, BAAL and LAGB.

Wells, J.C. (1982). *Accents of English.* [3 vols.]. Cambridge: Cambridge University Press.

APPENDIX
English Teaching Alphabet

Non-R Stressed Vocalic Complexes	Examples
o͞i	*void, boy*
ī	*time, pipe*
ē	*bead, leap*
ĭ	*sit, lip*
ā	*late, ape*
ĕ	*let, peck*
ă	*lap, sat*
ă$_2$	*laugh, mass*
â	*father, lager*
ŏ	*cop, lock*
ŏ$_2$	*loss, often*
a͡u	*laud, audible*
ō	*load, rope*
ŭ	*luck, up*
o͝o	*look, push*
o͞o	*loop, room*
ū	*mute, pewter*
o͞u	*loud, house*

Stressed Vocalic Complexes + R	
ĭr	*fire, lyre*
ēr	*near, beer*
âr	*square, pair*
ârr	*lark, bark*
ŏr	*or, horse*
ōr	*ore, hoarse*
ûr	*fur, fir*
o͞or	*moor, tour*
ūr	*cure, obscure*
o͞ur	*flour, flower*

IDEAL 7, 1994

ATTITUDE AS A DESCRIPTION OF INTONATIONAL MEANING

John M. Levis

One of the most common explanations for the meaning of intonation is the expression of speaker attitude, usually described through the use of specific adjectival descriptors (e.g. angry, surprised). However, the concept of attitude in intonational studies is fundamentally different from attitude as it is used in research in the social sciences. Important differences between the two traditions of attitude research are discussed and it is argued that attitude is an inadequate concept to describe intonational meaning because of the idiosyncratic definition of attitude used for intonational research.

Intonation performs many tasks in English, from signalling grammatical changes (Halliday, 1967) to expressing emotions and involvement (Bolinger, 1986) to highlighting the information structure of discourse (Bardovi-Harlig, 1986; Brown & Yule, 1983) to implicating certain types of meaning (Ward & Hirschberg, 1985). One of the most common explanations of intonational meaning, however, is the expression of speaker attitude. In fact, some researchers have argued that this is *the* essential meaning of intonation (Pike, 1945; O'Connor & Arnold, 1963).

The assumption that intonation conveys speaker attitude is so common in writings on intonation as to be almost an article of faith. Pike (1945, pp. 21-22), one of the most influential proponents of this position, says:

> In English...an INTONATION MEANING modifies the lexical meaning of a sentence by adding to it the SPEAKER'S ATTITUDE toward the contents of that sentence (or an indication of the attitude with which the speaker expects the hearer to react)....An extraordinary characteristic of intonation contours is the tremendous connotative power of their elusive meanings. One might hastily and erroneously assume that forms which change so rapidly and automatically could not be semantically potent. Actually, we often react more violently to the intonational meanings that to the lexical ones; if a man's tone of voice belies his words, we immediately assume that the intonation more faithfully reflects his true linguistic intentions. Thus, if someone says, *Is breakfast ready yet?* the sentence is either innocuous or an insult according to whether it is spoken nicely or nastily--and if the insult is resented, the speaker defends himself by saying, *I just asked if breakfast were ready and she flew into a rage*. This illustrates the fact that the intonation contours, though fluctuating like the speaker's attitude, are as strong in their implication as the attitude which they represent; in actual speech, the hearer is frequently more interested in the speaker's attitude than in his words--that is, whether a sentence is "spoken with a smile" or with a sneer.

The obvious facts that the same string of words can be spoken with different prosodic characteristics and that the choice of prosody will communicate different messages are the basis of Pike's assertion that intonation conveys a speaker's attitude. This, in fact, he sees as the primary function of intonation, although Ladd (1980) argues convincingly that attitude is conveyed by lexical choices, syntactic structures and other linguistic choices in addition to intonation.

The meaning of the term "attitude" shows some variation in the intonational literature. Primarily, it is expressed in one of two ways. The first is exemplified by Pike (1945), who expressed attitudinal meanings in general terms, with the basic meaning of the intonation contour being the lowest common denominator of all the uses of the intonational pattern. Thus the falling contours all have the basic meaning of "Contrastive Pointing" of "Center of Attention" (1945, p. 44).[1] An assumption of this approach is that intonation contours are morphemic, that is, that each significant contour is a meaning carrying unit in the message. The basic morphemic meaning can be interpreted to provide other local meanings, such as "surprise, unexpectedness, detachedness" in addition to others, depending on the kind of falling contour used and the sentence it occurs with. The specific labels (e.g. surprise) are not the primary meanings of intonation, but are interpretations based on the more basic, abstract meaning. The second approach is exemplified by the British writers O'Connor and Arnold (1963). Although they espouse much the same basic position as Pike, they focus on the specific attitude labels common to non-experts. Thus a particular intonation means things as varied as *reserving judgment, reproving criticism, resentful contradictions, wondering, disapproving, menacing, skepticism, calm warning, exhortation, or calm, casual acknowledgement* (for Tone group 6, see pp. 48-53). There is little discussion about how all these meanings might fit together. Though the level of generality is an important difference between the two positions, both agree on the essential issue: intonation expresses a speaker's attitude toward the message.

The belief that intonation expresses speaker attitude is intuitively logical. Clearly, prosody changes the interpretation of an utterance. However, the claims that intonation expresses a speaker's attitude are based on an idiosyncratic concept of attitude that is not shared by mainstream attitude research in the social and psychological sciences. The difference between the view of attitude used in intonational studies and the one used in the mainstream of attitude research necessitates an examination of the assumptions that underlie two separate traditions of attitude definition and measurement. The differences between these two traditions show that studies of intonation and attitude do not define or measure attitude in the way that the vast majority of other attitude research does. Because the differences are so fundamental, there is strong reason to believe that intonational research on attitude is both inaccurate and misleading.

ATTITUDE IN THE SOCIAL SCIENCES

In 1935, Gordon Allport said that "the concept of attitude is probably the most distinctive and indispensable concept in contemporary American social psychology" (p. 3). The concept lost none of its popularity in the ensuing years and in 1967, Martin Fishbein said that the enormity of the research literature and its proliferation in a myriad of sources made it practically impossible for anyone to keep up with the research on attitude. Although

the amount of research done on attitude is so large as to be impossible to digest, intonational studies show an almost total ignorance of both the research done and the definitions used.

The early years of attitude research were preoccupied with the definition of attitude and its measurement. Early definitions tended to focus on the behavioral consequences of the assumed inner state, on the assumption that a direct link existed between attitude and behavior. In this vein, Allport (1935, p. 7-8) reviews many older and then current definitions of attitude and concludes that the "essential feature of attitude (is) a *preparation or readiness for response.*" Thus attitude is the precondition for behavior and may exist in varying strengths and readiness, from that which is deeply buried to that which will affect behavior most readily. However, despite the behavioral focus of this definition, Allport also criticizes the view that attitudes are merely readiness for behavior as being insufficient to distinguish attitudes from habits.

Although the search for a connection between attitudes and actions has continued, the difficulties of a strictly behavioral definition of attitude were shown very early by Richard LaPiere (1934) in a study that examined racial prejudice of lodging and restaurant owners both by compiling their mailed responses to questionnaires and by being confronted with two potential Chinese guests. For two years beginning in 1930, LaPiere traveled extensively throughout the United States with a young Chinese couple. Previous social distance studies indicated that prejudice would cause lodging to be denied because of race in a majority of cases. However, out of 251 encounters, only one ended in a rejection.[2] This result was so surprising that a questionnaire was distributed after the two year period to the same establishments, asking specifically if Chinese people would be accommodated in the establishment. The response was 91% negative for those who responded, with the remainder being uncertain, and no one answering yes. This difference from the actual behavior in these establishments shows the operation of other factors between the polled attitude and the actual behavior.

In 1947, Doob wrote that attitude is "*an implicit, drive-producing response considered socially significant in the individual's society*" (p. 42). The drives produced by attitudes were no longer behavioral in the sense of overt actions, but were instead primarily within the individual and not necessarily apparent to other people. In addition, the responses to attitudes can be an internal perception of a situation, thoughts, images, stereotypes, linguistic responses or overt action (p. 47). Significantly, the social importance of attitudes is built into a definition for the first time.

Later attempts at definition continued to look for correlations between attitude and behavior without any promising results. The inability of attitude research to predict behavior led some researchers to reject attitude research as hopelessly irrelevant (Rimland, 1976) while others have instead tried to find reasons for the mismatch (McGuire, 1976). What is clear, however, is that there is very little correlation between what people describe as their attitudes and what they actually do.

The difficulty of treating behavior within the definition of attitude led to a multidimensional definition of attitude. Attitude, rather than being strictly evaluative, was thought to have three components: the affective, cognitive (beliefs), and connative (actions) components. Osgood (1967) calls these three factors the evaluative, potency and activity

factors, but he argues that attitude loads primarily on the evaluative component. In other words, while research points to the existence of at least kinds of affective meaning, the evaluative component is the heart of what most researchers call attitude. Even though traditional conceptions of attitude were found wanting, the multidimensional definition was very difficult to use in practice. This led to an attempt to restrict attitude to a smaller domain while trying to account for the other elements of meaning in another way. Fishbein (1965) argues the other elements of meaning are not attitude, but rather are part of the *beliefs* of an individual. The cognitive aspect he treats as the *belief in* an object, while the connative component would be *beliefs about* an object. Thus belief in the existence of God would be cognitive, while agreement that God is all-powerful would be connative. In contrast, feeling comfort or terror at the prospect of an all-powerful God would be evaluative, and would, Fishbein argues, be attitudinal. Fishbein argues that progress can best be made in attitudinal research if the definition of attitude is limited to the evaluative component and by treating the other components as part of *belief* rather than attitude.

Since the 1960s, questions about the definition of attitude have not been a major element in the social sciences, as though the issue had been settled as well as could be hoped for. The consensus view is that attitude is essentially a positive or negative evaluation of some social issue. Attitude is assumed to be measurable despite the difficulties in definition and is also assumed to be a reflection of psychological reality. In intonational studies, in contrast, the definition of attitude is far from settled and is considered by some researchers to be the basic problem involved in describing intonational meaning (Ladd et al., 1985).

TWO TRADITIONS OF ATTITUDE RESEARCH

The mainstream of attitude research has its own set of assumptions about what attitudes are and how they can be inferred and measured. This research tradition stands in contrast to the attitude research which focuses on the meaning of intonation, which makes very different assumptions about the nature of attitude and how it should be measured. Representative examples of studies in the social sciences and in intonational research will show the most important differences between the conception of attitude in each tradition. Although the variety of designs used in the social sciences is too great to look at in detail, attitude studies in the social and psychological sciences have typically sought to measure the attitudes held by groups of people toward a particular concept.

Mainstream attitude research will be exemplified by an early study done by Thurstone in the early 1930s which examined the influence on conduct from either belief or lack of belief in God (Shaw & Wright, 1967, p. 275ff). A series of statements bearing on the influence of such beliefs was constructed, tested and scaled on an 11-point Thurstone type scale. Subjects then responded to each statement, and the combined results of the responses were taken to be an indirect measure of the attitude toward the concept. The typical operational definition of attitude in mainstream attitude research is described by McGuire (1967, p. 10).

> Typically, the person's attitude toward an object on some dimension of variability is measured by presenting the person with a proposition that specifies the object and the dimension of judgment, accompanied with a

response scale on which the person can make a mark which indicates where the person feels this object should be assigned on this dimension of variability.

It is common for production experiments, where speakers try to express particular emotions or attitudes, to feed into perception experiments (decide which attitude is expressed by this sentence). However, production experiments can and have stood alone, as in many intonation and emotion experiments (see Scherer, 1979). Intonational research on attitude follows a different approach. I will focus on perception experiments as a comparison to the Thurstone study described above.[3] In this type of research, subjects make judgments about sentences using adjectives describing affective states (e.g. friendly, angry). Scherer et al. (1984), for example, used nine adjectives to represent attitudes. The adjectives had as little overlap as possible with one another while providing an adequate choice to the subjects among different types of attitudes. Subjects were instructed to identify with an "X" all of the adjectives that described the attitude of the speaker and to indicate with two "X"s the adjectives that were extremely appropriate (two Xs were used in only nine percent of the responses). While subjects could choose as many adjectives as they liked, the results showed that only one or two were chosen for each utterance.

There are a number of important differences between the Thurstone and the Scherer et al. studies that reveal fundamental differences between the two traditions, each of which will be discussed below. These are the object of the attitudes, the way in which attitudes are inferred, the nature of attitude, the measurement scales, and the use of social groupings in subject selection.

First, in the social sciences, attitudes always exist in relation to some social concept. The concept may be as concrete as a particular government policy, or it may be as abstract as belief in God. However, there must be a concept that one can hold attitudes about. Attitudes do not exist in the abstract, but only in relation to a concept. As the concept changes, so will the attitudes. It is not possible to ask what someone's attitudes are without asking what the attitudes are about.

Intonation studies, in contrast, are not interested in measuring evaluations of a concept. Instead, the goal of this tradition has been to determine the kind of message that is conveyed through intonation. It could be argued that intonation itself is the concept being evaluated. However, this position runs into serious difficulties of both definition and measurement. First, such a position assumes that the intonation itself is an identifiable social concept. While intonation performs social functions, there is no evidence that each intonation pattern can be defined in the same way that social issues like race relations or government policy are. Evaluating intonation as a social concept in its own right assumes two things: 1) intonation has a context independent meaning and, 2) that meaning can be accurately described with labels such as *friendly, impatient, or doubtful*. Many researchers have argued that intonation does make an independent contribution to the meaning of an utterance (Pike, 1945; Liberman, 1975; Ladd, 1980; Ward & Hirschberg, 1985; Pierrehumbert & Hirschberg, 1990). However, there is abundant evidence that judgments of intonation differ in relation to sentence type (e.g. falling pitch is judged differently for yes/no than for WH questions; see Uldall, 1960; Scherer et al., 1984), lexical content (Ladd, 1980), and context (McLemore, 1991). Even if it is granted that intonation patterns have

context independent meanings, the meanings must be at a level of abstractness that is far beyond the rather specific labels used in most intonational studies. There is another argument against considering intonation as a social concept in its own right. In most traditional studies, a concept is evaluated through some kind of language medium. However, the intonational signal is only one element of a language stimulus and does not exist outside of other elements of language.[4] Even if intonation were judged independently as a concept (as with humming), such judgments would ultimately be meaningless since intonation can only find interpretation in conjunction with other elements of language. It is clear that changes in intonation can change the interpretation of an utterance. Whether it is possible to describe this difference in terms of attitude as it is generally understood is unlikely. Intonation is too much a part of the overall message to be evaluated as a social concept in its own right. In summary, the question asked by intonational studies seems to be whether subjects agree on the interpretation of an utterance said in a particular way, not how the use of particular intonational patterns signals positive or negative evaluation toward a social concept. The clear difference between the conception of attitude in intonational and non-intonational studies calls into question whether the two traditions are really measuring the same construct.

Second, in the social and psychological sciences, attitude is inferred by response to statements that encode propositions about the concept in question. Since attitude is not directly observable nor can it be inferred from any single statement, studies use a large number of statements that bear on the concept, some of which are negatively weighted and others which are positively weighted. Inferring attitudes based on one statement, or even a small number of statements, would rightly call the validity of the conclusions into question.

Intonational studies, on the other hand, use a very small number of sentences that deliberately avoid any relationship to a social context. Uldall (1960, 1964), for example, chose four sentences (a statement, a yes/no question, a WH question, and a command), each of which she synthesized with 16 pitch patterns. She said that "the sentences were intended to be as colourless as possible so as to allow the intonation to add as much as possible to their meaning, and so that they would fit into as many situations as possible when combined with different intonations" (1960, p. 224). Keeping the sentences as decontextualized as possible has been a virtue in intonational research since it has been important to maximize the impact of the intonation. In a much later study, Ladd et al. (1985, p. 436) chose three sentences that also could be consistent with many different attitudes. Again, the three sentences used in the study were decontextualized and unrelated to each other. In other words, what is essential in non-intonational studies (viz., many statements scaled in relation to a social concept) is avoided in intonational studies, which use very few decontextualized and unrelated sentences.

Third, in non-intonational studies, attitude is seen as a judgment that is essentially positive or negative in nature. No specific labels (e.g. anger, surprise) are attached to the positive/negative judgments made. Osgood, Suci, & Tannenbaum (1957) argue that attitude is essentially evaluative but they also carefully avoid speaking about specific labels as being attitudes. The semantic differential, Osgood's measurement instrument designed to measure meaning, uses specific adjectival labels, as seen below. However, the specific labels are important only insofar as they help define a point in a semantic space. They have no importance in and of themselves. Osgood et al. (1967, p. 26) state:

> What is meant by "differentiating" the meaning of a concept? When a subject judges a concept against a series of scales, e.g.,
>
> FATHER
>
> happy ____:____:____:____:____:____:____ sad
> hard ____:____:____:____:____:____:____ soft
> slow ____:____:____:____:____:____:____ fast, etc.
>
> each judgment represents a selection among a set of given alternatives and serves to localize the concept as a point in the semantic space. The larger the number of scales and the more representative the selection of these scales, the more validly does this point in the space represent the operational meaning of the concept.

In contrast, most intonational studies focus on the specific labels rather than a general evaluative judgment. The labels are the goal rather than being a means to an end. This is most clearly seen in the production oriented studies which have attempted to discover the acoustic correlates of particular labels (Scherer, 1979; Crystal, 1969). Lieberman and Michaels (1962, p. 922), for example, asked subjects to read eight sentences in eight different ways: a bored statement, a confidential communication, a question expressing disbelief, a message expressing fear, one expressing happiness, an objective question, an objective statement, and a pompous statement.[5] After analyzing the sentences acoustically, they chose the best acoustic examples for a matching test. In Scherer et al. (1984), an initial list of 250 adjectives were sorted by judges into those that were suitable and unsuitable for judging the speech stimuli (in this case, a variety of yes/no and information questions). From those that were suitable, nine adjectives "that overlapped as little as possible and provided an adequate choice to the subjects" were chosen (p. 1348). Thus the essential criterion for the construction of this type of scale is that the adjectives be as distinct as possible from one another. The need to do this in itself indicates the difficulty of distinguishing the meanings of the labels, a difficulty discussed in some detail in Ladd (1980). A later study (Ladd et al., 1985) also used a set of carefully contrasting attitudinal and emotional labels. Although results reached significance for most of the labels, the authors were dissatisfied and concluded that such labels were too imprecise to really describe the meaning of the intonation. They say that (p. 442)

> Perhaps the most important weakness of this study, and indeed of the whole general area of research, is the absence of a widely accepted taxonomy of emotion and attitude . Not only does this make it difficult to state hypotheses and predictions clearly, but (on a more practical level) it makes it difficult to select appropriate labels in designing rating forms.

Although the authors argue that what is needed is a better set of labels, most mainstream attitude researchers have decided that such a specification is neither necessary nor possible. Since attitude is an evaluative judgment that is scaled positively or negatively, there is no need to specify as carefully as intonation researchers wish. One social science attitude researcher, instead of specifying a taxonomy, takes the opposite position and includes

attitude, emotion, and other terms in what he calls "acquired behavioral dispositions" (McGuire, 1976, p. 12).

> Some related constructs are so close to attitudes in their connotation that they should be used interchangeably. Falling into this category, with decreasing obviousness, are terms such as opinions, beliefs, cognitions, prejudices, preferences, percepts, concepts, values and interests. Going slightly further afield, intervening constructs such as habits, motives, emotions, etc., have somewhat less connotational overlap with attitudes but play quite comparable roles in our thinking....Stress on distinguishing these constructs is not only wasted effort but, more seriously, tends to blind us to communalities and the possibilities of analogous thinking from what is known on one of the constructs to what we are seeking to know about the others.

The only intonational studies that use labels to get at more basic issues of meaning were conducted by Uldall (1960, 1964). Both studies used Osgood's semantic differential as a measurement instrument. Uldall found evidence for all three meaning factors described by Osgood et al. (1957), that is, for the evaluative, potency, and activity meaning types. Evaluative meaning was the most powerful of the three factors, accounting for over 50 percent of the variance. These studies then lend support to the idea that intonation expresses attitude, because the evaluative factor in Osgood et al. (1957) is argued to be most nearly equivalent with traditional conceptions of attitude. A difficulty with the studies is that they use an untenable taxonomy of intonation (Ladd, 1980). Because the definition of intonation is difficult to support, her results can only be suggestive of the kind of affective meaning conveyed by intonation.

Fourth, in mainstream studies attitudes are typically measured along a scale. Although attitude is essentially a positive or negative evaluation of a concept, there are different degrees of positive or negative that are built into the measurement instruments. For example, a typical Thurstone type scale has eleven points. Statements about the concept being evaluated are sorted by experts along the eleven point scale according to their relative positiveness or negativeness toward the concept. The results of the sorting for several experts are then averaged and weighted. When subjects agree or disagree with a statement, the weighted score becomes part of the measure of their attitude toward the concept. The time intensiveness of the Thurstone scale led to the development of the Likert scale, in which statements are self-scaled along a five-point measure according to the degree of agreement with a statement. In both cases, however, the attitude judgment is not only positive or negative but is also scaled for degree. The scales used are minimally ordinal in nature, and some theorists have argued that many attitude scales are for all practical purposes interval scales (Osgood et al., 1967, p. 85; Shaw & Wright, 1967, p. 20ff).

Intonational studies, in contrast, typically use measurement instruments with nominal variables. In one apparent use of a scale, Scherer et al. (1984) asked subjects to choose the best adjectives to describe the attitude conveyed by a speaker. Subjects could mark one X or two XXs depending on how strongly the utterance represented a particular label. However, less than nine percent of the responses used two XXs, creating an essentially nominal scale. Other studies have not allowed a scaling of the particular adjective labels, i.e. it has not been possible to say that a sentence with a particular intonation conveyed more

or less of a particular affective state. Because the labels are essentially variables measured on a nominal scale–an important assumption of attitude research–the use of degrees of approval/disapproval, is lacking in intonational research on attitude.

Fifth, in the social sciences, attitude research often compares groups of subjects in regard to a particular issue. This is possible because attitudes relate to social concepts and scales are meant to maximally distinguish between groups which are in a different relationship to the concept. For example, Southern white males and Northern white males could be targeted for their attitudes toward capital punishment, since there may be some reason to believe that these two groups differ in significant ways regarding the concept.

Intonation studies, on the other hand, do not compare subjects based on social groupings. Instead, these studies seem to assume that all speakers of a language will react in much the same way to particular intonations because they are part of the same larger speech community. Since there is no concept being evaluated, the kind of grouping that is done in attitude studies in the social sciences is not really possible with intonation studies. Before such groupings can be done, it is necessary to have some theoretically motivated criterion for choosing groups that are likely to differ in responses to intonation. At present, no such criterion exists. Very few studies have examined the social patterning of intonation, and most of those have focused on regional variations (e.g. British vs. American English). In a beginning step toward a description of social patterns of intonation, McLemore (1991) strongly argued for the social patterning of intonational patterns in social groups at the micro-level. In a way, it is not surprising that there is very little research that examines the attitudes of diverse social groups to intonation. Without a resolution of the more fundamental issue, viz., evaluation of a social concept, the measurement of attitudes is really not possible in intonation studies.

The differences in attitude studies in the two traditions differ are shown in Table 1.

DIFFICULTIES WITH INTONATIONAL STUDIES

Intonational research on attitude has never yielded very good results, primarily because attitude is not a useful concept to describe intonational meaning. The studies themselves display the serious weaknesses inherent in attempting to define meaning with specific affective terms. Ladd (1980) points out that two studies conducted in the 1960s show conflicting evidence about the ease with which subjects can identify specific affective descriptors. Lieberman and Michaels (1962) argue that *boredom* is one of the most consistently identified labels, while Osser (Ladd, 1980) found that it is one of the most consistently confused labels. The reason for the discrepancy, Ladd says, is that Lieberman and Michaels chose labels that did not easily confuse while Osser included *calmness* and *sadness* along with boredom, both of which were confused with *boredom*. As a consequence, later studies have tried to choose labels that are maximally distinct from one another. This was the criterion for the rating labels chosen in the Scherer et al. (1984) and the Ladd et al. (1985) studies.

Crystal (1969), in an instructive study on the value of specific labels, conducted a production experiment to discover the labels that had well-defined contrastivity for different

speakers. He chose twenty labels and had six subjects, three men and three women, read sentences in such a way as best represented each label. For all subjects,

> some labels had a well-defined contrastivity and were highly meaningful to the informants (for example, 'angry', 'impatient', 'boring', 'questioning', 'pleased'); others had very little clear formal definition, and were useless as indicators of attitude....Substantial disagreements over all but a few labels emerged from a relatively small number of informants, which suggests the existence of deep divisions of usage in these respects (p. 307).

After analysis of the phonetic detail for each of the labels, Crystal chose 20 utterances which he felt were particularly good performances of each label, and constructed a matching task similar to the one used by Lieberman and Michaels (1962). The same six subjects who read the sentences were asked to match the label to the attitude being

Table 1
Differences between two attitude research traditions

Traditional Attitude Studies	Intonational Studies
1. Seek judgments about a social concept.	1. Evaluate intonation apart from any other concept.
2. Use a series of statements or propositions by which the concept can be evaluated.	2. Use decontextualized sentences which are meant to be colorless and disconnected from any concept.
3. Measure the positive or negative reaction to a concept but avoid labeling the evaluation with specific descriptors.	3. Use measurement instruments which use specific labels rather than positive or negative responses to a concept.
4. Measure attitude on an ordinal or interval scale.	4. Measure attitude on a nominal scale.
5. Compare distinct groups and assume that a sample of subjects differ in their attitudes toward a concept based on social differences.	5. Assume that all speakers will have similar judgments of the attitudes conveyed by intonation. Expect uniformity of response rather than patterned distinctions based on social factors.

expressed. The best score was 60 percent correct identification, and no two subjects made the same set of identifications and misidentifications. Several weeks later, Crystal asked the same subjects to label the attitudes expressed by the sentences, this time without labels being provided to them. The best identification percentage fell to 20 percent, and there was a strong tendency to use two to three labels to describe the attitude. In addition, the six

subjects used nearly 100 labels in contrast to the 20 original labels. These results bear out Crystal's major point about labels, that "the way in which individuals use such labels is not constant: a label's meaning may vary from person to person, and even within one person from time to time" (p. 295).

If this kind of inconsistency occurs even for a small number of subjects who are asked to label sentences that they themselves have read and have identified previously, there is very little reason to assume that what is needed are more carefully defined descriptors. Instead, the nature of affective meaning must be at a more general level than that assumed by the descriptors. While it is true that people consistently make judgments that someone sounds happy or pompous or sad or anything else, it is simply counter-productive to assume that intonational meaning can best be understood in terms of these specific labels. Judgments of happiness or sadness are made through a complex interpretive scheme involving the entire communication context, and though intonation is a part of this context, in itself it cannot narrow the judgment to a particular label or set of labels.

While there are good operational reasons for choosing maximally distinct labels (especially the fact that the results are unlikely to show any significant identifications when the labels have similarities of some kind), the very need to keep the labels so distinct argues that the specific labels are inadequate and that what subjects are identifying is a more general affective category. The labels are only a symbol of something more abstract, and are chosen because they come closest to the general affective reaction.

Not all writers on intonation have been enthralled with attitude as a description of intonational meaning. While most studies have demonstrated that intonation conveys affective meaning of some sort, the directness of the link between intonation and particular "attitudes" is not clear. McLemore (1991, p. 136), for example, states that individual labels can characterize very different pitch patterns. Thus anger, a heavily studied affective state, has been associated with both high and low pitch. Such variation shows that there are mediating influences between the intonation and the local interpretation. Attitude research has sought to specify the final interpretation without an adequate understanding of the inferential processes involved in interpreting particular tunes (i.e. intonation contours) and without an understanding of the role of context in affecting particular interpretations. McLemore (1991, p. 134-135) hints at the extent of the difficulties inherent in attempting to specify intonational meaning in terms of speaker attitude.

> ...the interpretation of an intonational form in terms of attitude involves imputing certain interactive and communicative goals to a speaker. This is accomplished through a complex interaction between the patterned uses of a given form in the culture generally, situations specifically, and discourses (i.e. the indexical value of a form in the culture); evaluation of speaker's [*sic*] intentions in terms of a socially recognized role, including the relative status with which that role endows the speaker; and aspects of the immediate discourse context, including topic, and their interaction with expectations for communicative behaviors in the specific situation in the culture.

Pierrehumbert & Hirschberg (1990, p. 284) also criticize speaker attitude as insufficient to characterize intonational meaning.

> Though speaker attitude may sometimes be inferred from choice of a particular tune, the many-to-one mapping between attitudes and tune suggests that attitude is better understood as derived from tune meaning interpreted in context than as representing that meaning itself....Neither speech acts nor propositional attitudes–at least as standardly understood–appear to provide sufficient characterizations for available tunes in English.

The inability to specify particular attitudes for particular tunes in English shows that attitude, as it is conceived of in intonational research, is too simplistic to be useful.

CONCLUSION

Ladd et al. (1985) suggest that most of the difficulties in intonation and attitude research could be solved with a more precise taxonomy of attitude and emotion. However, the contention of this paper is that the way that attitude has been characterized in intonational research is not a profitable way to describe the meaning of intonation. The specific labels used to describe attitudes are a way to describe the inference made from the speech signal in a particular context, but it is not possible to consistently identify the labels, nor to correlate particular pitch patterns with particular labels. Intonational studies of attitude have sought a precision that is not likely to be possible no matter what kind of a taxonomy of attitude and emotion is developed, since the desire to precisely label attitudinal meaning with particular labels is fundamentally flawed and resembles mainstream attitude research in name only.

This raises a question as to whether it is possible for intonation researchers simply to use a different term for "attitude" and have a viable research agenda. If there was no connection to mainstream attitude research at all, would there then be validity in the same line of research? In other words, is the problem only one of terminology, or is there something more fundamentally wrong with the approach taken in intonation research? I suggest that there is a fundamental flaw in the approach that invalidates the approach whether intonation research uses the word attitude or not.

Clearly, the speech signal carries messages that can be described as "affective" (Ladd et al., 1985). These messages can be conveyed by intonation contours, the placement of the nucleus, the pitch range, voice quality, amplitude, speech tempo, gesture and many other suprasegmental and paralinguistic elements (Crystal, 1969; Bolinger, 1986, 1989). However, previous research has shown both the impossibility of associating specific labels to any of these elements alone (Crystal, 1969) and the tendency of listeners to not consistently distinguish labels that are not maximally distinct (Ladd, 1980), thus suggesting that different listeners cannot agree on specific labels. It has also been shown that mainstream attitude research long ago began using specific labels only to show general orientations to a topic. It is reasonable to assume, then, that the failure to find adequate labels to describe intonational meaning, whether the labels are said to describe attitude, emotion or any other term that may be used instead, stems from a flaw in the approach,

especially because the desired specificity goes against mainstream attitude research. It also goes against the focus of intonational research, in which basic meanings are maximally abstract rather than specific (Pierrehumbert & Hirschberg, 1990; McLemore, 1991). More specific meanings can likely only be calculated with reference to a more fully developed theory of pragmatics, since fundamental frequency and other suprasegmental elements contribute to the meaning of an utterance only in conjunction with other elements of the utterance (Ladd, 1980; Pierrehumbert & Hirschberg, 1990).[6] Even granting a more fully developed theory of pragmatics that will allow calculations of specific meanings, it is unlikely that the specificity hoped for by some researchers is possible or desirable. It is hard to imagine, for example, a calculation that would allow a clear distinction to be made between words like "calm," "bored," and "matter-of-fact." Language does not allow such specificity. Instead, there are always misunderstandings and different interpretations, with listeners hearing what speakers never intended, both parties creating and adjusting meaning through the interaction.

One possible use for the research on intonation and affect is in distinguishing categorical differences in contours. This was the approach taken by Hirschberg and Ward (1992) in distinguishing between two interpretations consistently given to the rise-fall-rise intonation (L*+H L H% in Pierrehumbert's terms). The labels "incredulity" and "uncertainty" were used to investigate the contribution of different features to differing interpretations of the two contours. The labels were used not to argue that certain features meant "incredulity" or "uncertainty" but to argue for abstract meaning differences associated with certain features, specifically differences in speaker involvement. While it is well-known that listeners, even trained listeners, do not consistently hear phonetic differences in intonation, they do seem able to draw distinctions between messages conveyed by changes in intonation (Pierrehumbert, 1980). Thus, this knowledge can be used to help support distinctions in intonation (see also Pierrehumbert & Steele, 1989). However, using specific labels as a description of meaning will only lead to wasted energy. Intonational meaning has never been described well with such an approach, not because we lack a clear enough taxonomy of attitudes and emotions, but because such labels can only suggest speaker affect. Intonational meaning may eventually be described with such labels, but only if we understand that the labels can at best remain general descriptions that are the final output of many linguistic and paralinguistic elements.

ACKNOWLEDGEMENT

Many thanks to Margreet Sanders for her helpful comments on an earlier version of this paper.

THE AUTHOR

John Levis is a doctoral candidate in Educational Psychology at the University of Illinois at Urbana-Champaign. His interests include intonational research and second language acquisition. He is also involved with training of master's degree candidates in teaching English as a second language.

NOTES

[1]Pike explains the basic meaning this way. "The word or syllable which contains the beginning point of the primary contour is singled out as the CENTER OF SELECTIVE ATTENTION of the speaker, or constitutes the demand by the speaker that the hearer focus his attention at that point" (1945, 44). This meaning is similar to that posited for the nucleus in other accounts.

[2]LaPiere tried to remove himself as a potential factor in the treatment accorded the Chinese couple. He tried to send them in to the establishments first to ask for accommodations while he took care of the luggage or car so that the owners' responses would be more clearly based on their race.

[3]Intonational studies can be divided into two basic types: production studies and perception studies. In production studies, subjects are asked to read sentences so as to express particular attitudes or emotions, that is, to read the sentences excitedly, confidently, angrily, etc. Lieberman and Michaels (1962), for example, asked subjects to read eight sentences in eight different ways (e.g. pompous, confidential, angry). The sentences were then analyzed acoustically to find common prosodic characteristics for each label. Sentences that were particularly good examples of each label were then used for a perception experiment. It is common for production experiments, where speakers try to express particular emotions or attitudes, to feed into perception experiments. However, production experiments can and have stood alone, as in many intonation and emotion experiments (see Scherer, 1979).

[4]Intonation is ignored as a variable in mainstream attitude research, in which the stimuli are written and not oral.

[5]This study is instructive because of the mixing of grammatical and affective categories (e.g. statement - happiness). This mixing calls into question whether subjects performed the matching task well because they heard only the affective categories or because they matched stimuli to grammatical categories as well.

[6]Pike (1945) also recognized that the attitudes conveyed by intonation were first and foremost abstract meanings rather than specific. Thus while he argued strongly for intonational meaning being attitudinal, he did not pretend that the meaning could be best described with specific labels.

REFERENCES

Allport, Gordon (1935). Attitudes. In Martin Fishbein (Ed.), *Readings in attitude theory and measurement* (pp. 1-13). John Wiley and Sons, Inc.

Bardovi-Harlig, Kathleen (1986). *Pragmatic determinants of English sentence stress*. Indiana University Linguistics Club.

Bolinger, Dwight (1986). *Intonation and its parts*. Stanford University Press.

Bolinger, Dwight (1989). *Intonation and its uses*. Stanford University Press.

Brown, Gillian, & Yule, George (1983). *Discourse analysis*. Cambridge University Press.

Crystal, David (1969). *Prosodic systems and intonation in English*. Cambridge University Press.

Doob, Martin (1947). The behavior of attitudes. In Martin Fishbein (Ed.), *Readings in attitude theory and measurement* (pp. 42-50). John Wiley and Sons, Inc.

Fishbein, Martin (1965). A consideration of beliefs, and their role in attitude measurement. In Martin Fishbein (Ed.), *Readings in attitude theory and measurement* (257-266). John Wiley and Sons, Inc.

Fishbein, Martin (Ed.). (1967). *Readings in attitude theory and measurement*. John Wiley and Sons, Inc.

Halliday, M. A. K. (1967). *Intonation and grammar in British English*. Mouton.

Hirschberg, Julia & Ward, Gregory (1992). The influence of pitch range, duration, amplitude and spectral features on the interpretation of the rise-fall-rise intonation contour in English. *Journal of Phonetics*, 20, 241-251.

Ladd, D. Robert (1980). *The structure of intonational meaning*. Indiana University Linguistics Club.

Ladd, D. Robert, Silverman, Kim E. A., Tolkmitt, Frank, Bergmann, Günther, & Scherer, Klaus F. (1985). Evidence for the independent function of intonation contour type, voice quality, and F_0 range in signaling speaker affect. *Journal of the Acoustical Society of America*, 78, 435-444.

LaPiere, Richard (1934). Attitudes vs. actions. In Martin Fishbein (Ed.), *Readings in attitude theory and measurement* (pp. 26-31). John Wiley and Sons, Inc.

Liberman, Mark Yoffe (1975). *The intonational system of English*. Indiana University Linguistics Club.

Lieberman, Philip, & Michaels, Sheldon B. (1962). Some aspects of fundamental frequency and envelope amplitude as related to the emotional content of speech. *Journal of the Acoustical Society of America*, 34, 922-927.

McLemore, Cynthia A. (1991). *The pragmatic interpretation of English intonation: Sorority speech*. Unpublished dissertation. University Microfilms International.

McGuire, William J. (1976). The concepts of attitudes and their relations to behaviors. In H. W. Sinaiko & L. A. Broedling. Perspectives on attitude assessment: Surveys and their alternatives (pp. 7-31). Pendleton Publications.

O'Connor, J. D., & Arnold, G. F. (1963). *Intonation of colloquial English*. Longmans.

Osgood, Charles E., Suci, George J., & Tannenbaum, Percy H. (1957). *The measurement of meaning*. University of Illinois Press.

Pierrehumbert, Janet. (1980). *The phonology and phonetics of English intonation*. Indiana University Linguistics Club.

Pierrehumbert, Janet, & Hirschberg, Julia (1990). The meaning of intonational contours in the interpretation of discourse. In Philip R. Cohen, Jerry Morgan, & Martha E. Pollack, (Eds.), *Intentions in communication* (pp. 271-311). MIT Press.

Pierrehumbert, Janet, & Steele, Shirley A. (1989). Categories of tonal alignment in English. In *Phonetica*, 46, 181-196.

Pike, Kenneth (1945). *The intonation of American English*. University of Michigan Press.

Rimland, Bernard (1976). The view from over the back fence: Reactions of a friendly neighbor. In H. W. Sinaiko & L. A. Broedling, *Perspectives on attitude assessment: Surveys and their alternatives* (pp. 239-242). Pendleton Publications.

Scherer, Klaus F. (1979). Nonlinguistic vocal indicators of emotion and psychopathology. In Carroll E. Izard, *Emotions in psychology and psychopathology* (pp. 495-528). Plenum Press.

Scherer, Klaus F., Ladd, D. Robert, & Silverman, Kim E. A. (1984). Vocal cues to speaker affect: Testing two models. *Journal of the Acoustical Society of America*, 76, 1346-1356.

Shaw, Marvin E., & Wright, Jack M. (1967). *Scales for the measurement of attitudes*. McGraw-Hill Book Company.

Uldall, Elizabeth (1960). Attitudinal meanings conveyed by intonation contours. *Language and Speech*, 3, 223-234.

Uldall, Elizabeth (1964). Dimensions of meaning in intonation. In D. Abercrombie, D. B. Fry, P. A. D. MacCarthy, N. C. Scott, & J. L. M. Trim (Eds.), *In honour of Daniel Jones: Papers contributed on the occasion of eightieth birthday* (pp. 271-279). Longmans.

Ward, Gregory, & Hirschberg, Julia (1985). Implicating uncertainty: The pragmatics of fall-rise intonation. *Language*, 61, 747-776.

Back Issues of *IDEAL*

Volume 1 (1986)

Inaugural Issue

Editorial 1

Adapting and Applying Levinson's Concept of the Dispreferred Second to the Review of ESL Materials 5
Lawrence F. Bouton

Comparability of Cross-Sectional and Longitudinal Findings in a Second Language Acquisition Study 43
Yeon Hee Choi

A Pedagogical Interpretation of Generative Phonology: V. Consonant Choice 53
Wayne B. Dickerson

Teaching ESL Listening Comprehension and Pronunciation 69
Janice L. Moy

Lects and Institutionalized Varieties of English: The Case of Singapore 93
Mary W. J. Tay

The Production and Perception of Foreign Language Sounds
James E. Flege (Reviewed by Molly Mack) 109

* * * * * *

Volume 2 (1987)

Computers in Language Research and Language Learning

Four Decades with the Computer 5
Winfred P. Lehmann

The Uses of the Personal Computer in the Humanities 17
James W. Marchand

Digging in the Dictionary: Building a Relational Lexicon to Support Natural Language Processing Applications 33
Martha Evens, Judith Markowitz, Thomas Alhswede, and Kay Rossi

Vocoders and Speech Perception: Uses of Computer-Based Speech Analysis-Synthesis in Stimulus Generation 45
Joseph Tierney and Molly Mack

Current Trends in Computer-Based Language Instruction 63
Robert S. Hart

Microcomputer Feedback to the Student/Learner 75
Patricia A. Mulligan and Gary G. Bitter

An Example of the Use of Microcomputers in Foreign Language Learning and Teaching from a High School for the Academically Talented 91
Constance Curtin and Stanley Shinall

Template Construction as a Basis for Error-Analysis Packages in Language Learning Programs 97
Stephen C. Helmreich

* * * * * *

Volume 3 (1988)

Celebrating the 40th Anniversary of
The Division of English as an International Language

The *ng* Challenge: Five Simple Rules for Pronunciation Prediction 1
Carol A. Buss

The Effect of Markedness on Epenthesis in Spanish/English Interlanguage Phonology 15
Robert S. Carlisle

Proficiency-Based Instruction: Implications for Methodology 25
Alice Omaggio Hadley

Interpreting Indian English Expository Prose 39
Yamuna Kachru

The Effects of Socialization on Cognitive Style and Second Language Learning Among Southeast Asian Refugees 51
Dana Conner Ritchie

Exploring the Relationship between Second Language Acquisition and Foreign Language Learning 69
Bill VanPatten and James F. Lee

What is FLL Research? 75
Claire J. Kramsch

In Second Language Acquisition/Foreign Language Learning, Nothing is More Practical than a Good Theory 83
Sandra J. Savignon

Theory and Research in SLA and FLL: On Producers and Consumers 99
Bill VanPatten

Models, Processes, Principles, and Strategies: Second Language Acquisition In and Out of the Classroom 111
Roger W. Andersen

* * * * * *

Volume 4 (1989)

Selected Papers from
The Second Annual Conference on Pragmatics Learning

Pragmatics and Reading in a Second Language 5
Patricia L. Carrell

English across Cultures: Native English Speaker in the Third World 25
P. B. Nayar

Pragmatic Analysis in the Second Language Classroom 37
Jeff Connor-Linton

An Analysis of the Rhetorical Structures of English and Japanese Editorials 51
Thomas Ricento

A Comparison of Narrative Structures of English-Speaking and Spanish-Speaking Students 69
Delma McLeod Porter

Identifying Referents in Narrative Discourse: A Comparison of the Acquisition of Pronominal and Zero Anaphora by Native and Non-Native Speakers of English 85
Erica McClure

A Discourse Analysis of Relative Clauses in Chinese and English: An Error in "An Error in Error Analysis" 105
Rong Zhao

So They Got the Message, But How Did They Get It? 119
Lawrence F. Bouton

Yes/No Questions in ESL Textbooks and Classrooms 149
Jessica Williams

Oh Darn! I'd Love to Come, but I Already Have Plans: Television Invitations as Conversation Models 157
Ann Salzmann

* * * * * *

Volume 5 (1990)

Video-Based Materials for Communicative ITA Training 1
Elizabeth Axelson and Carolyn Madden

The Aural Perception of Fast-Speech Phenomena 13
Inn-Chull Choi

Learning Styles of Mainland Chinese Students of English 29
Carolyn Dirksen

English <s>: Cracking the Symbol-Sound Code 39
Wayne B. Dickerson

Theoretical Linguistics and Applied Linguistics Research: Perspectives on their Relationship to Language Pedagogy 65
Molly Mack

A Multimodel Paradigm for TESL: Implications for the Classroom and Beyond 75
Frances K. Vavrus

* * * * * *

Volume 6 (1993)

Request-Compliance/Non-Compliance in English and Italian Public Service Encounters 1
Anna Ciliberti

A Sensitive Period for Second Language Acquisition: A Reaction-Time Grammaticality Judgment Task with Korean-English Bilinguals 15
Ryonhee Kim

Multilingualism and Social Identity: The Case of Singapore 29
Knonko M. Kamwangamalu

Sensitive Periods for Second Lanuage Acquisition: A Reaction-Time Study of Korean-English Bilinguals 43
Rosa Jinyoung Shim

An Analysis of Televised Telephone Conversations 65
Nina Skokut

The Pragmatics of "No!": Some Strategies in English and Arabic 87
Paul B. Stevens

* * * * * *

✂----------

ORDER FORM

Vol 1 ($5.00) x _____ copies = $_____
Vol 2 ($8.00) x _____ copies = $_____
Vol 3 ($8.00) x _____ copies = $_____
Vol 4 ($8.00) x _____ copies = $_____
Vol 5 ($8.00) x _____ copies = $_____
Vol 6 ($8.00) x _____ copies = $_____
Vol 7 ($8.00) x _____ copies = $_____

TOTAL _____ Enclosed: $_____

Division of English as an International Language
University of Illinois
3070 Foreign Languages Building
707 S. Mathews Avenue
Urbana, IL 61801

Name: _____

Address: _____

❑ (Check) Please add my name to the IDEAL mailing list.

Issues and Developments in English and Applied Linguistics (IDEAL)

Style Sheet for Contributors

1. Typing area should be 6.5 x 9.0 inches (16.5 x 23 cm). For 8.5 x 11 inch paper, top and bottom margins are .75 inch and side margins are 1.125 inch. No text should exceed these margins.
2. All text should be double spaced. The first line of each paragraph should be indented five spaces.
3. An abstract of not more than 200 words should follow the author's name. The entire abstract should be indented five spaces from left and right margins. Indent five additional spaces for the first line of each paragraph.
4. The title is centered and all capitals. The author's name is centered and in mixed capitals. The first level of headings is centered and all capitals. The second level is mixed capitals and flush with the left margin. The third level is underlined (or italicized), on the same line as the paragraph opening, and indented five spaces. Only the first word and proper nouns of the third level are capitalized.
5. Endnotes should be numbered serially throughout the text using raised numerals. Each number refers to a note at the end of the paper.
6. Notes, references, examples, tables, charts and figures are typed as illustrated in *IDEAL* (or *TESOL Quarterly* or *The Publication Manual of the APA*), but are double spaced.
7. The last line of the text is followed by ACKNOWLEDGMENTS—a statement of not more than fifty words; THE AUTHOR—a statement of not more than fifty words; NOTES; and REFERENCES. Each heading is centered and capitalized.
8. In general, articles and review articles should not exceed twenty pages in length in the form described above. Reviews should not exceed ten pages in the form described above.
9. Hard copy manuscripts should be sent in triplicate to the following address.

   Editor, *IDEAL*
   Division of English as an International Language
   3070 Foreign Languages Building
   707 South Mathews Avenue
   Urbana, Illinois 61801 U.S.A.

10. Articles accepted for publication are returned to the author(s) copy-edited. The editor asks contributors to prepare the revised typescript in a form that can be photoreduced and printed without further editorial work. To insure consistency of format, the editor will enclose a copy of the *IDEAL* Style Sheet for Preparing Articles in Photo-Ready Form to be followed carefully.
11. To correspond with the editor, use the above address, our fax number (213/244-3050), or our e-mail address (w-dickerson@uiuc.edu). Fax and e-mail submissions are not acceptable.

IDEAL

Volume 7
1994

Contents

ESL Students and Common L2 Conversation-Making Expressions 1
Eli Hinkel

Thematic Options in Reporting Previous Research 13
Sarah Thomas and Thomas Hawes

Symposium on Phonology and Pronunciation

Connected Speech Modifications in the English of Japanese ESL Learners 31
Janet Anderson-Hsieh, Timothy Riney, and Kenneth Koehler

Discourse Stress and Phrasal Verbs 53
Wayne B. Dickerson

The Stress of Compound Nouns: Linguistic Considerations and Pedagogical Considerations 67
Laura D. Hahn

Where Phonology Meets Orthography 79
Thomas R. Hofmann

Attitude as a Description of Intonational Meaning 91
John M. Levis

115

BEST COPY AVAILABLE